16-ch Standalone DVR

User Manual

For H.264 16 Channel Digital Video Recorder

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*All contents of this document may change without prior notice.

CAUTION

- **Please read this user manual carefully to ensure that you can use the device correctly and safely.**
- **We do not warrant all the content is correct. The contents of this manual are subject to change without notice.**
- **This device should be operated only from the type of power source indicated on the marking label. The voltage of the power must be verified before using. Kindly remove the cables from the power source if the device is not to be used for a long period of time.**
- **Do not install this device near any heat sources such as radiators, heat registers, stoves or other devices that produce heat.**
- **Do not install this device near water. Clean only with a dry cloth.**
- **Do not block any ventilation openings and ensure well ventilation around the machine.**
- **Do not power off the DVR when the device is in function. The correct procedure to shut down DVR is to stop recording first, then use "shut down" button from the menu, and finally switch off the main power.**
- **This equipment is for indoor use only. Do not expose the machine to rain or moist environment. In case any solid or liquid gets inside the machine's case, please cut off the power supply immediately and get it checked by a qualified technician.**
- **Refer all servicing to qualified service personnel. Do not repair any parts by yourself without technical aid or approval.**
- **This manual is suitable for 16-channel digital video recorders. All examples and pictures used in the manual are from 16-channel DVR.**

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1 Introduction

1.1 DVR Introduction

This model of DVR (Digital Video Recorder) is designed for high performance CCTV solutions. It adopts state of the art video processing chips and embedded Linux system. Meanwhile, it utilizes most advanced technologies, such as standard H.264 with low bit rate, Dual stream, SATA interface, VGA output, mouse supported, IE browser supported with full remote control, mobile view (by smartphones), etc., ensuring powerful functions and high stability. Due to these distinctive characteristics, it is widely used in banks, telecommunication, transportation, factories, warehouse, and other related applications.

1.2 Main Features

COMPRESSION FORMAT

- Standard H.264 compression with low bit rate and better image quality

LIVE SURVEILLANCE

- Support HDMI, VGA, Composite, and BNC output
- Support channel security by hiding live display
- Display the local record state and basic information
- Support USB to make full control

RECORD MEDIA

- Support two SATA HDD for 16 channel (not included).

BACKUP

- Support USB 2.0 devices to backup
- Support saving recorded files with AVI standard format to a remote computer through internet

RECORD & PLAYBACK

- Record modes: Manual, Schedule, Motion detection, and Sensor alarm recording
- Support recycle after HDD full
- Resolution, frame rate, and picture quality are adjustable
- 128MB for every video file packaging
- 4 audio channels available
- Two record search mode: time search and event search
- Support 16 screen playback simultaneously
- Support deleting and locking the recorded files one by one
- Support remote playback in Network Client through LAN or internet

ALARM

- 1 channel alarm output and 16 channel alarm input available
- Support schedule for motion detection and sensor alarm
- Support pre-recording and post recording
- Support linked channel recording, once motion or alarm triggered on certain channel
- Support linked PTZ preset, auto cruise, and track of the corresponding channel

PTZ CONTROL

- Support various PTZ protocols
- Support 128 PTZ presets and 8 auto cruise tracks
- Support remote PTZ control through internet

SECURITY

- Customize user's right: log search, system setup, two way audio, file management, disk management, remote login, live view, manual record, playback, PTZ control, and remote live view
- Support 1 administrator and 63 users.
- Support event log recording and checking, events unlimited

NETWORK

- Support TCP/IP, DHCP, PPPoE, DDNS protocol
- Support IE browser to do remote view
- Support setup client connection amount
- Support dual stream. Network stream is adjustable independently to fit the network bandwidth and environment.
- Support picture snap and color adjustment in remote live
- Support remote time and event search, and channel playback with picture snap
- Support remote PTZ control with preset and auto cruise
- Support remote full menu setup, changing all the DVR parameters remotely
- Support mobile surveillance by smart phones: iPhone, Android, Symbian, WinCE, Gphone, or Blackberry, with 3G network availability
- Support CMS to manage multi devices on the internet

2 Hardware Installation

***Notice**:*

Check the unit and the accessories after getting the DVR.

Please disconnect the power before being connected to other devices. Don't hot plug in/out.

2.1 Install Hard Drive

2.1.1 Hard Drive

***Notice**:*

1. This series support two SATA hard drives (not included). Please use the hard drive the manufacturers recommend specially for security and safety. Please refer to "Appendix C Compatible Devices 2".

2. Please calculate HDD capacity according to the recording setting. Please refer to "Appendix B Calculate Recording Capacity".

Step 1: Unscrew and open the top cover

Step 2: Connect the power and data cables. Place the HDD onto the bottom case as Fig 2.1.

Step 3: Mount the HDD as Fig 2.1.

Note: Please connect the power and data cables first, and then wind the screws to fix the HDD

Fig 2.1 Connect HDD and then Screw HDD

2.2 Front Panel Instructions

Fig 2.2 Connect HDD

***Notice**: The front panel descriptions are only for reference; please make the object as the standard.*

Item	Type	Name	Description
1	Work state indicator	Power	Power indicator: when connected, the light is blue
		HDD	When HDD is reading and writing, the light is blue
		Net	When accessing to a network, the light is blue
		Backup	When backing up files and data, the light is blue
		Play	When playing video, the light is blue
		REC	When recording, the light is blue
2	Compound button	MENU/+	1. Enter menu in live 2. Increase the value in setup
		BACKUP/-	1. Decrease the value in setup 2. Enter backup mode in live
		RECORD/FOCUS	1. Record manually 2. FOCUS function enables at PTZ mode.

Item	Type	Name	Description
		REW/SPEED	1. Rewind key 2. SPEED function enables at PTZ mode
		SEARCH/ZOOM	1. Enter search mode 2. ZOOM function enables at PTZ mode.
		PLAY/IRIS	1. Enter play interface 2. IRIS function enables at PTZ mode
		FF/ P.T.Z.	1. Fast forward 2. Enter PTZ mode in live
		STOP/ESC	1. Quit play mode 2. Exit the current interface or status
3	Digital button	1-9	Input number 1-9 or choose camera
		0/10+	Input number 0, 10 and the above number together with other digital keys
4	Input button	Direction button	Change direction to select items
		Multi-screen	Change screen display mode to 1/4/9/16 channel
		Enter button	Confirm selection
5	IR receiver	IR	For remote controller
6	USB	USB port	To connect external USB devices like USB flash, USB HDD for backup or update firmware; or connect to USB mouse

2.3 Rear Panel Instructions

The rear Panel interface for 16-ch is shown in Fig 2.3:

Fig 2.3 Rear Panel for 16-ch

Item	Name	Description
1	P/Z	Connect to speed dome
2	K/B	Connect to keyboard
3	ALARM IN	Connect to external sensor 1-16
4	HDMI	Connect to high-definition TV or display device
5	LAN	Network port
6	VGA port	VGA output, connect to monitor
7	Video out	BNC Video output port, Connect to TV
8	Video in	Video input channels from 1-16
9	Audio in	4-ch audio input
10	Power Switch	Power on/off
11	Fan	For cooling the device

Item	Name	Description
12	ALARM OUT	1-ch relay output. Connect to external alarm (GND, NO)
13	+ 5V and GND	+5 V and Grounding (COM, GND)
14	USB port	Connect USB mouse or connect external USB devices
15	Spot out	Connect to monitor as an AUX output channel by channel. Only video display, no menu show
16	Audio out	Audio output, connect to the sound box
17	DC12V	POWER INPUT

2.4 Remote Controller

It uses two AAA size batteries and works after loading batteries as explained below:
Step 1: Open the battery cover of the Remote Controller.
Step 2: Place batteries. Please take notice of the poles. (+ and -)
Step 3: Replace the battery cover.
***Notice**: Frequently check the following*
1. Check poles of the batteries.
2. Check the remaining charge in the batteries.
3. Check IR controller sensor is mask.
If it still doesn't work, please change to a new remote controller and try, or contact your dealer.
The interface of remote controller is shown in Fig 2.4 Remote Controller.

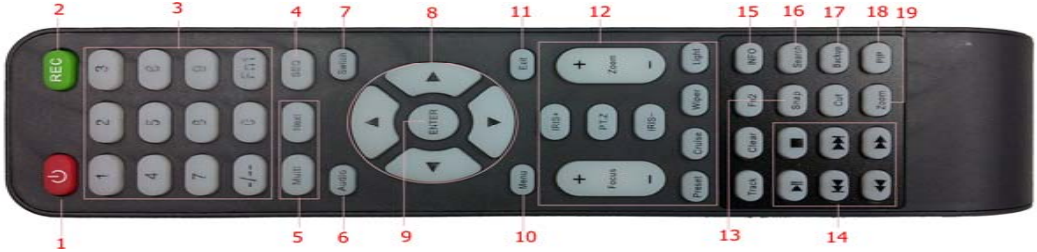


Fig 2.4 Remote Controller

Item	Name	Function
1	Power Button	Soft switch off to stop firmware from running. Do it before power off.
2	REC Button	To record manually
3	Digital Button	Input digital or choose camera
4	Auto Dwell Button	To enter auto dwell mode
5	Multi Screen Button	To choose multi screen display mode
6	AUDIO Button	To enable audio output in live mode
7	Switch	To switch Video output
8	Direction Button	Move cursor in setup or pan/tilt PTZ
9	ENTER Button	To confirm the choice or setup
10	MENU Button	To enter menu
11	Exit	To exit the current location of the menu
12	PTZ Control Button	To control PTZ camera: Move camera/ZOOM/FOCUS/IRIS/SPEED control
13	Snap Button	To snap live pictures that will be saved in the SATA disk.
14	Playback Control Button	To control playback, fast forward/rewind/stop/single frame play

Item	Name	Function
15	INFO Button	Get information about the DVR like firmware version, HDD information
16	SEARCH Button	To enter search mode
17	BACKUP Button	To enter backup mode
18	PIP Button	To enter into picture in picture setting mode
19	Zoom Button	Single channel electronic amplification

Operation processes with remote controller to control multi-DVR

The device ID of the DVR is 0. When using remote controller to control a single DVR, it's not necessary to reset the device ID, user can do operation directly; when controlling multiple DVRs with a remote controller, please refer to the steps below:

Step 1: Activate remote controller to control DVR: enable DVR: turn the IR sensor of the remote controller to the IR receiver that's on the front panel, press the number key 8 twice, then input device ID (Range from: 0-65535; the default device ID is 0) with other digital number: 0-9, after that, press ENTER button to confirm.

Step 2: User can check the device ID by entering into System configuration → Basic configuration → device ID. User can also set other DVRs with the same device ID. For convenience, we don't recommend user to set the device ID too long.

Step 3: Cancel controller to control DVR: turn the IR sensor of the remote controller to the IR receiver that's on the front panel, press the number key 8 twice, then input the device ID that needs to be cancelled from controlling, press ENTER button to confirm. After that, the DVR will not be controlled by remote controller.

2.5 Control with Mouse

2.5.1 Connect Mouse

It supports USB mouse through the ports on the rear panel.

***Notice**: If mouse is not detected or doesn't work, check the steps below:*

1. Make sure the mouse plugs into the USB mouse port not the USB port.

2. Change to a different mouse to try.

2.5.2 Use Mouse

In live:

Double-click left button on one camera to display full screen. Double-click again to return to the previous screen.

Click right button to show the control bar at the bottom of the screen as Fig 4.1 Menu Toolbar. Click right mouse again to hide the control bar.

In setup:

Click left button to enter. Click right button to cancel setup, or return to the previous display.

If want to input a value, move cursor to a blank and click. An input keyboard will appear like in Fig 2.5. It inputs digitals, letters, and symbols.

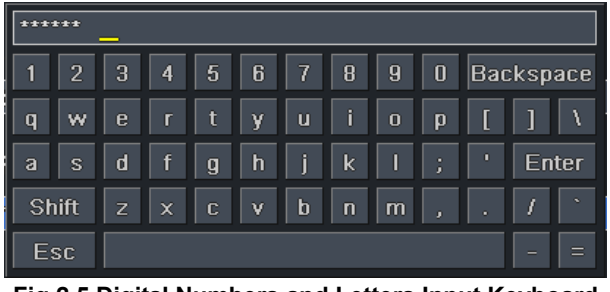


Fig 2.5 Digital Numbers and Letters Input Keyboard

User can change some values with the mouse wheel, such as time. Move cursor onto the value and roll the wheel when the value blinks.

It also supports mouse drag (Example: Set motion detection area: click customized, hold left button, and drag to set motion detection area.)

In playback:

Click left button to choose the options. Click right button to return to live mode.

In backup:

Click left button to choose the options. Click right button to return to previous picture.

In PTZ control:

Click left button to choose the buttons to control the PTZ. Click right button to return to live.

***Notice**:*

Mouse is the default tool in all the operations above.

3 Basic Function Instruction

3.1 Power On/Off

Before you power on the unit, please make sure all the connections are good.

3.1.1 Power On

Step 1: Connect with the source power. This turns on the power.

Step 2: The device will be loaded and the power indicator will display blue.

Step 3: Before start, a WIZARD window will be pop-up and show some information about time zone, time setup, network configuration, record configuration, and disk management. User can setup here and refer to the concrete setup steps from the corresponding chapters. If user doesn't want to setup Wizard, please click Exit button to exit.

After the device power goes on, if there is no menu or only has live image display, user can long press ESC button to switch.

***Notice**: This serial device can only display menu on VGA monitor or BNC monitor at one time. If there is live image display without menu display, please check whether other device has menu display first, or long press ESC key to wait for login dialog box to appear. Long press ESC key can switch the output between BNC and VGA.*

3.1.2 Power Off

User can power off the device by using remote controller, keyboard, and mouse.

By remote controller:

Step 1: Press Power button and the shut down window will appear. Click OK and the unit will power off after a while.

Step 2: Disconnect the source power.

By keyboard and mouse:

Step 1: Enter into Menu, select “Shut Down” icon, and the Shut down window will appear.

Step 2: Click OK and the unit will power off after a while.

Step 3: Disconnect the source power.

3.2 Login

User can login and logout the DVR system. Once logged out, user cannot do any other operations except changing the multi-screen display.

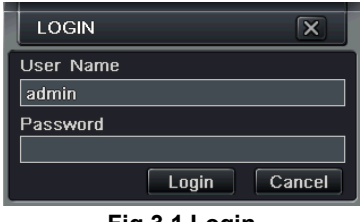


Fig 3.1 Login

***Notice**: The default user name and password is “admin” and 123456”. For detailed steps to change password, add, or delete user, please refer to “4.7 User Management Configuration” for more details.*

3.3 Live Preview

Fig 3.2 Live Preview Interface

Symbol	Meaning
Green	Manual record
Yellow	Motion detection record
Red	Sensor Alarm record
Blue	Schedule record

3.3.1 Live Playback

Click Play button to playback the recorded videos. Refer to Figure 3.3. User can do concrete operation by clicking the buttons on screen.

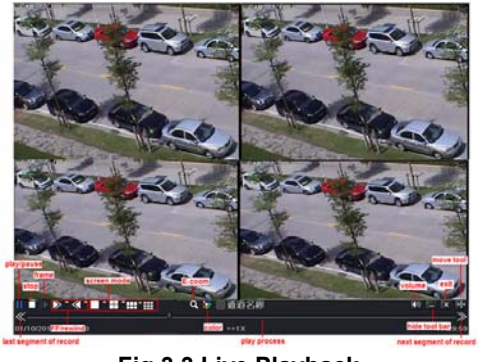


Fig 3.3 Live Playback

4 Main Menu Setup Guide

Click right mouse or press ESC button on the front panel and the control bar will display on the bottom of the screen. Refer to Fig 4.1:

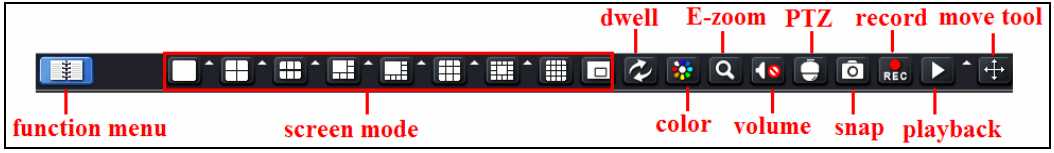


Fig 4.1 Menu Toolbar

Click the icon beside the screen display mode to display a channel select dialog. Single channel big screen can be one on 6/8/13 channels views. Images can drag to any place to display in the live interface. Click icon to set up picture-in-picture. Click the icon beside the playback icon to select a time to play back. For example, if 2 minutes is selected, it will start to playback from 2 minutes ago.

Dwell: Range of selecting to dwell from single picture preview mode to 4/6/9/16 picture preview mode.

Color: User can adjust the color of live pictures.

E-Zoom: Single channel large screen electronic amplification. Left click the channel which needs to amplify and click E-Zoom to amplify the image. Press left mouse to drag the cursor to view different parts of the image. Double-click the left mouse to exit. Click the right mouse to return to the main interface.

Volume: Enable sound.

PTZ: User can control rotation position, speed of the dome, start track, auto scan, and cruise in this interface. User can refer to PTZ configuration for more details.

Snap: User can snap the live pictures. These pictures will automatically be saved in the SATA disk.

Record: User can start manual record.

Playback: Device can playback the recorded files.

User can click button and drag it anywhere with the left mouse. Click Menu button and the interface will pop-up like in Fig 4.2; pressing the MENU button on the front panel or operating with the remote controller can also display the main menu. Click Setup icon will pop-up the configuration menu:

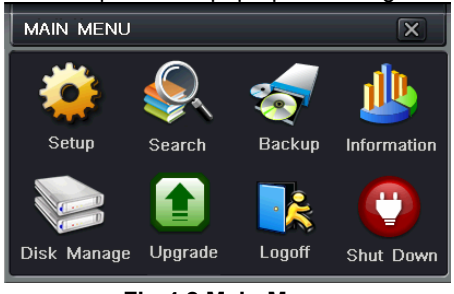


Fig 4.2 Main Menu

Configuration Menu

4.1 Basic Configuration

Basic configuration includes three sub menus: system, date & time, and DST.

4.1.1 System

Step 1: Enter into system configuration → basic configuration → system.

Step 2: In this interface, user can setup the device name, device ID, video format, max online users, Video Output and language, Screensaver and so on. The definitions for every parameters display as below:

Device Name: Name of the device. It may display on the client end or CMS that help user to recognize the device remotely.

Video Format: Two modes: NTSC and PAL. User can select the video format according to the camera.

Password Check: Enable this option. User needs to input user name and password to do corresponding operations with

the relevant right in system configuration.

Show System Time: Displays time in live.

Startup Wizard: Tick off this item and it will display an opening wizard with time zone and time setup information.

Max Online Users: Set the max user amount for network connection.

Video Output: The resolution of live display interface ranges from: VGA 800*600, VGA 1024*768, VGA 1280*1024 and CVBS.

Note: When switching between VGA and CVBS, it will change the menu output mode. Please connect to relevant monitor.

Language: Setup the menu language.

Note: After changed the language and video output, the device needs to login again.

Logout After (Minutes): A user can setup the screen interval time (.5, 1, 3, 5, Never). If there is no operation within the setting period, the device will auto logout and return to login interface.

No Image When Logout: If this item is selected, there will be no image showing when logged out.

4.1.2 Time & Date

Step 1: Enter into system configuration → basic configuration → time & date. Refer to Fig 4.3.

Step 2: Set the date format, time format, time zone in this interface. User can also adjust system date manually.

Step 3: Click “default” button to set default setting. Click “apply” button to save the setting. Click “exit” button to exit current interface.

Fig 4.3 Basic Configuration - Time & Date

4.1.3 DST

Step 1: Enter into system configuration → basic configuration → DST. Refer to Fig 4.4.

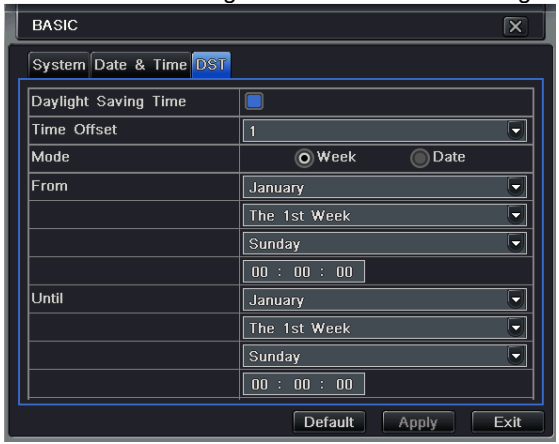


Fig 4.4 Basic Configuration - DST

Step 2: In this interface, enable daylight saving time, time offset, mode, start & end month/week/date, etc.

Step 3: Click “default” button to set default setting. Click “apply” button to save the setting. Click “exit” button to exit current interface.

4.2 Live Configuration

Live configuration includes four submenus: live, main monitor, spot, and mask.

4.2.1 Live

In this interface, user can setup camera name, adjust colors to brightness, hue, saturation, and contrast.

Step 1: Enter into system configuration → live configuration → live. Refer to Fig 4.5.

Note: Click Camera Name to see an input keyboard. User can name the camera. Click Shift button to input Capital letters and click Shift button again to input Chinese characters.

Step 2: Tick off camera name and click "setting" button to display a window like Fig 4.7.

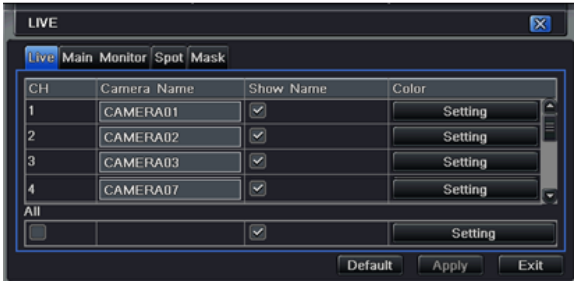


Fig 4.5 Live Configuration – Live

Fig 4.6 Live - Color Adjustment

Step 3: In this interface, user can adjust brightness, hue, saturation, and contrast in live. Click "default" button to set default setting and click "OK" button to save the setting.

Step 4: User can setup all channels with same parameters, please tick off "all" and then do relevant setup.

Step 5: Click "default" button to set default setting. Click "apply" button to save the setting and click "exit" button to exit current interface.

4.2.2 Main Monitor

Step 1: Enter into system configuration → live configuration → main monitor. Refer to Fig 4.7.

Step 2: Select split mode: 1×1, 2×2, 2×3, and 3×3.

Step 3: Dwell time: The time interval for a certain dwell picture display switching to next dwell picture display.

Step 4: Select split mode and setup current picture group. Click button to setup the previous channel groups of dwell

picture and click button to set the latter channel groups of dwell picture.

Step 5: Click “default” button to set to default setting. Click “apply” button to save the setting. Click “exit” button to exit current interface.

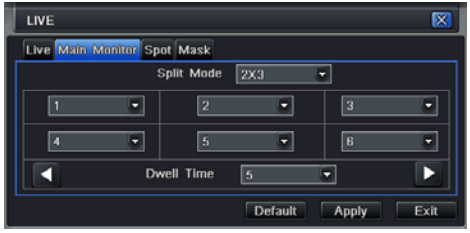


Fig 4.7 Live Configuration - Host Monitor

4.2.3 Spot

Step 1: Enter into system configuration → live configuration → spot. Refer to Fig 4.8.

Step 2: Select split mode: 1×1 and channel of choice.

Step 3: Dwell time: The time interval for a certain dwell picture display switching to next dwell picture display.

Step 4: Select split mode and setup current picture group. Click button to setup the previous channel groups of dwell picture. Click button to set the latter channel groups of dwell picture.

Step 5: Click “default” button to set to default setting. Click “apply” button to save the setting. Click “exit” button to exit current interface.

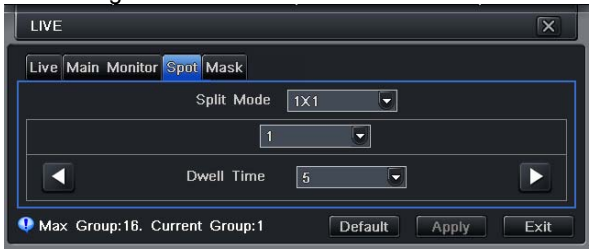


Fig 4.8 Live Configuration - Spot

4.2.4 Mask

User can setup private mask area on the live image picture, max threes areas.

Enter into system configuration → live configuration → mask. Refer to Fig 4.9.

Setup mask area: Click setting button under mask area and enter into live image. Press left mouse and drag mouse to set mask area, refer to below picture. Click Apply button to save the setting.
Delete mask area: Select a certain mask area and click left mouse to delete that mask area. Click Apply button to save the setting.

Fig 4.9 Live Configuration - Mask

Setup Mask Area

Live Image Mask Area

4.3 Record Configuration

Record configuration includes six sub menus: enable, record bit rate, time, recycle record, stamp, and snap.

4.3.1 Enable

Step 1: Enter into system configuration → record configuration → enable. Refer to Fig 4.10.

Fig 4.10 Record Configuration - Enable

Parameter	Meaning
Record	Record switch of every channels
Audio	Enable live record audio

Step 2: Tick off record and audio.

Step 3: User can setup all channels with same parameters, tick off “all” and then do relevant setup.

Step 4: Click “default” button to set to default setting. Click “apply” button to save the setting and click “exit” button to exit current interface.

4.3.2 Record Bitrate

Step 1: Enter into system configuration → record configuration → record bitrate. Refer to Fig 4.11.

Step 2: Setup rate, resolution, and quality.

Step 3: User can setup all channels with same parameters, tick off “all” and then do relevant setup.

Step 4: Click “default” button to set to default setting. Click “apply” button to save the setting and click “exit” button to exit current interface.

Note: If the rate value set is over high the maximum resources of the device, the value will be adjusted

automatically.

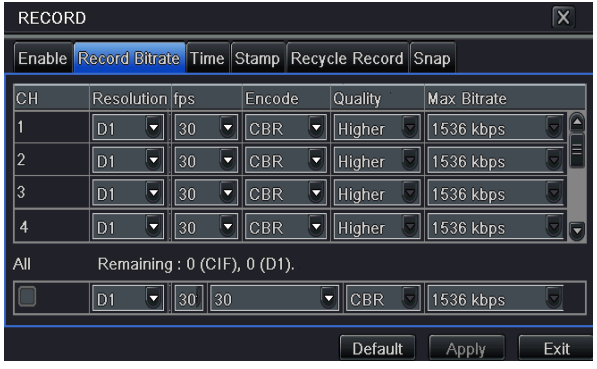


Fig 4.11 Record Configuration - Record Bitrate

Parameter	Meaning
Resolution	Support CIF, HD1, and D1
FPS	Ranges from 1-30 (NTSC), 1-25 (PAL)
Encode	VBR and CBR
Quality	The higher the value is, the clearer the recorded image is. Six options: lowest, lower, low, medium, higher and highest.
Max bitrate	Range from: 256 kbps, 384 kbps, 512 kbps, 768 kbps, 1024 kbps, 1280 kbps, 1536 kbps, 1792 kbps, 2048 kbps

4.3.3 Time

Step 1: Enter into system configuration → record configuration → time. Refer to Fig 4.12.

Pre-alarm record time: The record time before event happens i.e. record time before motion detection or sensor alarm is triggered.

Post-alarm record: Set the post recording time after the alarm is finished. Options: 10s, 15s, 20s, 30s, 60s, 120s, 180s and 300s.

Expire time: The hold time of saved records. If the set date is overdue, the record files will be deleted automatically.

Step 2: User can setup all channels with same parameters. Tick off “all” to do relevant setup.

Step 3: Click “default” button to set to default setting. Click “apply” button to save the setting and click “exit” button to exit current interface.

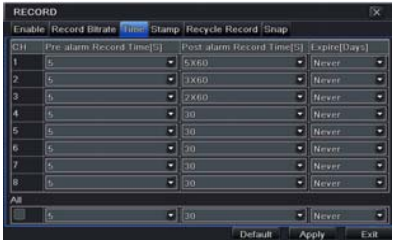


Fig 4.12 Record Configuration - Time

4.3.4 Stamp

Stamp: User can overlap the channel name and time stamp on video.

Step 1: Enter into system configuration → record configuration → stamp. Refer to Fig 4.13.

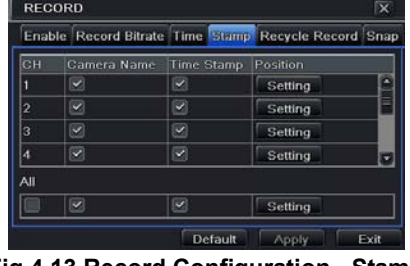
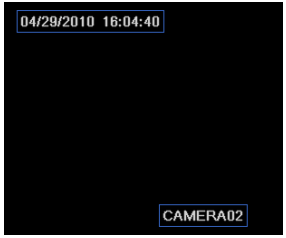


Fig 4.13 Record Configuration - Stamp

Step 2: Tick off camera name and time stamp. Click Setting button and then user can use cursor to drag the camera name and time stamp in random positions. Please refer to below Figures:



Before drag

After drag

Step 3: User can also setup all channels with same parameters.
Step 4: Click “default” button to set to default setting. Click “apply” button to save the setting and click “exit” button to exit current interface.

4.3.5 Recycle Record

Step 1: Enter into system configuration → record configuration → recycle record.
Step 2: Tick off recycle record to enable the recycle record function. It will cover the earlier recorded files and keep recording when HDD is full. If dis-enabled, it will stop recording when HDD is full.
Step 3: Click “default” button to set to default setting. Click “apply” button to save the setting and click “exit” button to exit current interface.

4.3.6 Snap

In this interface, user can set up resolution, quality, snap interval, snap number.

4.4 Schedule Configuration

Schedule configuration includes three sub menus: schedule, motion, and alarm.

4.4.1 Schedule

The row means seven days of a week from Monday to Sunday and the column means 24 hours of a day. Click the grid to do relevant setup. Blue means selected area, gray means unselected area.

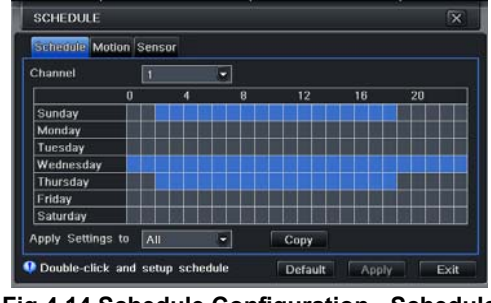


Fig 4.14 Schedule Configuration - Schedule

Step 1: Select channel, double-click, and a dialog box will pop-up like in Fig 4.15 where user can edit week schedule.

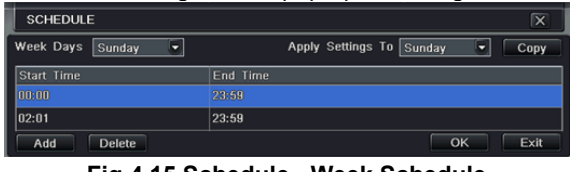


Fig 4.15 Schedule - Week Schedule

① Click “add” button to add a certain day schedule. Click “delete” button to delete the selected schedule.
Copy: User can copy the specify schedule to other dates.
Click “OK” button to save the setting and click “Exit” button to exit current interface.

② User can apply the schedule setting of certain channel to other or all channels. Just select channel and click "Copy" button.

Step 3: Click "apply" button to save the setting.

4.4.2 Motion

Step 1: Enter into system configuration → schedule configuration → motion. Refer to Fig 4.16.

Step 2: The setup steps of motion are familiar with schedule. User can refer to "4.4.1 Schedule" for details.

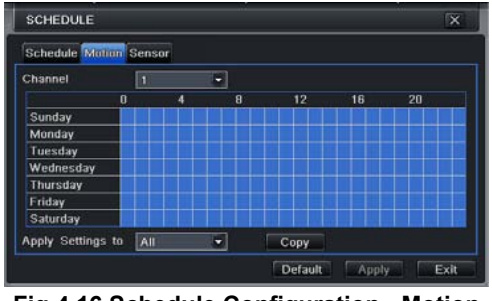


Fig 4.16 Schedule Configuration - Motion

Note: The default schedule of motion detection is full-selected, that is, the color of schedule setting interface is blue.

4.4.3 Sensor

Step 1: Enter into system configuration → schedule configuration → alarm. Refer to Fig 4.17.

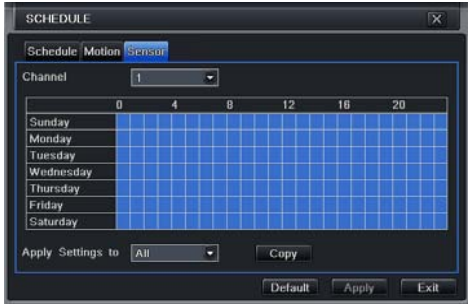


Fig 4.17 Schedule Configuration – Sensor

Step 2: The setup steps of alarm are familiar with schedule. User can refer to "4.4.1 Schedule" for details.
Note: The default schedule of sensor is full-selected, that is, the color of schedule setting interface is blue.

4.5 Alarm Configuration

Alarm configuration includes five sub menus: sensor, motion, video loss, other alarm, and alarm out.

4.5.1 Sensor

Sensor includes three sub menus: basic, alarm handling, and schedule.

① Basic

Step 1: Enter into system configuration → alarm configuration → sensor → basic. Refer to Fig 4.18.
Step 2: Enable sensor alarm and set the alarm type according to triggered alarm type. Two option: NO and NC.
Step 3: User can setup all channels with same parameters. Please tick off "all" and then do relevant setup.
Step 4: Click "default" button to set to default setting and click "apply" button to save the setting. Click "exit" button to exit current interface.

Fig 4.18 Alarm Configuration - Sensor - Basic

② Alarm handling

Step 1: Enter into system configuration → alarm configuration → sensor → alarm handling. Refer to Fig 4.19.

Step 2: Select hold time and click Trigger button. Then a dialog box will pop-up as Fig 4.20.

Fig 4.19 Alarm Configuration - Sensor - Alarm Handling

Fig 4.20 Alarm Handling - Trigger

Step 3: After selecting Buzzer, there will be triggered buzzer alarm out.
Full screen alarm: When triggered alarm, an alarm full screen will pop up.
Email: Tick off this function. When an alarm is triggered, a notification email will be sent to user's designed email box including trigger events, time, snap pictures, device name, ID camera name etc.
Snap: Select channels. When an alarm is triggered, the system will automatically save the captured pictures from the selected channel. If user ticks off Email function, these pictures will also be sent to user's designed email box.
To alarm out: When selecting the channel, there will be triggered alarm out in the designated channel. Click OK button to save the setting and click Exit button to exit the current interface.
To record: Tick off recording channels. It will record the camera when alarm is triggered. Click OK button to save the setting and click Exit button to exit the current interface.
To P.T.Z: Set linked preset and cruise for alarm. User can select any channel and multi channels as linked channels. Click OK button to save the setting and click Exit button to exit the current interface.
Step 4: user can also setup all channels with same parameters.
Step5: click "default" button to resort default setting; click "apply" button to save the setting; click "exit" button to exit current interface.

③ Schedule

Step 1: Enter into system configuration → alarm configuration → sensor → schedule. Refer to Fig 4.21.

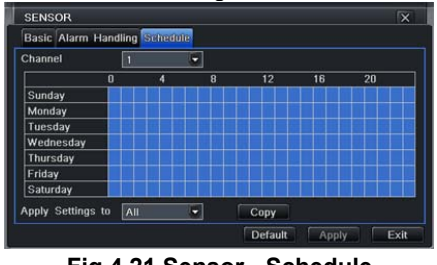


Fig 4.21 Sensor - Schedule

Step 2: The setup steps of sensor schedule are similar with schedule. User can refer to “4.4.1 Schedule” for details.

Note: the default schedule of sensor is full-selected, that is, the color of schedule setting interface is blue.

4.5.2 Motion

Motion includes two sub menus: motion and schedule.

① Motion

Step 1: Enter into system configuration → alarm configuration → motion. Refer to Fig 4.22.

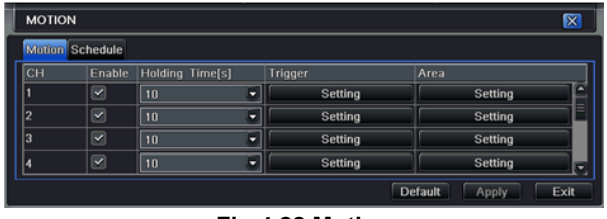


Fig 4.22 Motion

Step 2: Enable motion alarm and set alarm hold time which means time interval between two adjacent detective motions. If there is other motion detected during the interval period, this is considered continuous movement. Otherwise, it will be considered that those two adjacent detective motions are two different motion events. Click Trigger button to pop up a dialog box.

Step 3: The setup steps of motion trigger are similar with alarm handling. User can refer to “Chapter 4.5.1 Sensor → Alarm Handling” for more details.

Step 4: Click Area button to pop-up a window like in Fig 4.23.

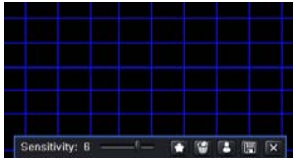
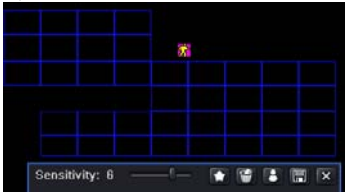


Fig 4.23 Motion - Area

Step 5: In the Area interface, user can drag slide bar to set the sensitivity value (1-8). The default value is 4. The higher the value is the higher sensitivity you get. Due to sensitivity being influenced by color and time (day or night), user can adjust its value according to the practical conditions. Click icon, set the whole area as detection area. Click icon, the set detection area will be cleared. Click icon, user can test whether the sensitivity value and motion area are suitable accordingly (refer to the following picture). Click icon, to save the setting. Click icon, exit current interface.



Note: when user drag mouse to set motion detection area, they have to click icon to clear all set detection area firstly, and then make the operation.

Step 6: User can also setup all channels with same parameters.

Step 7: Click “default” button to set to default setting. Click “apply” button to save the setting and click “exit” button to exit current interface.

② Schedule

Step 1: Enter into system configuration → alarm configuration → schedule. Refer to Fig 4.24.

Step 2: The setup steps of alarm schedule are similar with schedule. User can refer to “4.4.1 Schedule” for details.

4.5.3 Video Loss

Step 1: Enter into system configuration → alarm configuration → video loss. Refer to Fig 4.25.

Step 2: The setup steps of video loss trigger are similar with alarm handling. User can refer to "4.5.1 Sensor → alarm handling" for more details.

Step 3: User can also setup all channels with same parameters.

Step 4: Click "apply" button to save the setting and click "exit" button to exit current interface.

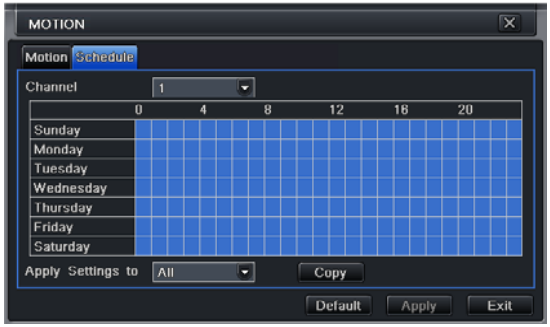


Fig 4.24 Alarm Configuration - Schedule

Fig 4.25 Alarm Configuration - Video Loss

4.5.4 Other Alarm

Step 1: Enter into system configuration → other alarm. Refer to Fig 4.26.

Disk full: User can choose the capacity of the disk storage and select the related alarm. If the disk is full, the system will alarm according to the setup.

IP conflict: If there is an IP address conflict within the same network, the device will alarm after user selects buzzer and the channel to alarm out.

Disconnect: If there's a disconnection, the device will alarm after the user selects buzzer and the channel to alarm out.

Disk Warning: If the disk reduces, the system will send email to the designated mailbox or alarm to notify the reducing

information after the user has selected the corresponding function.

Step 2: The setup steps of Buzzer, Email, and Alarm Out are similar with alarm handling. User can refer to "4.5.1 Sensor → alarm handling" for more details.

Step 3: Select a hard disk in the pull down list box. When the disk capacity is lower than that value, there will appear some text information on the lower right of the live image.

Step 4: Click "default" button to set to default setting. Click "apply" button to save the setting and click "exit" button to exit current interface.

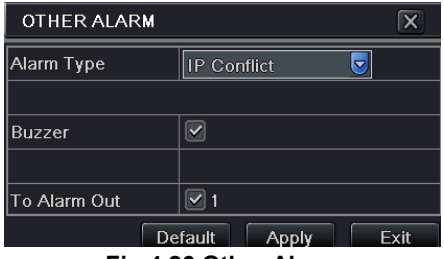


Fig 4.26 Other Alarm

4.5.5 Alarm Out

Alarm out includes three sub menus: alarm out, schedule, and buzzer

① Alarm out

Step 1: Enter into system configuration → alarm out. Refer to Fig 4.27.

Step 2: In this interface, set relay alarm out name, select hold time which means the interval time between the two adjacent alarms.

Step 3: User can setup all channels with same parameters. Tick off "all" to do relevant setup.

Step 4: Click "apply" button to save the setting and click "exit" button to exit current interface.

② Schedule

Step 1: Enter into system configuration → schedule.

Step 2: The setup steps of alarm out schedule are similar with schedule. User can refer to “4.4.1 Schedule” for details.

Note: The default schedule of motion detection is full-selected, that is, the color of schedule setting interface is blue.

③ Buzzer

Step 1: Enter into system configuration → buzzer

Step 2: Tick off Buzzer, set buzzer alarm hold time.

Fig 4.27 System Configuration - Alarm Out

4.6 Network Configuration

Network configuration includes four submenus: network, sub stream, e-mail, and other settings.

4.6.1 Network

Step 1: Enter into system configuration → network configuration → network. Refer to Fig 4.28.

Step 2: HTTP port: the default value is 80. If the value changes, user needs to add the port number when typing IP address in IE. For example: if HTTP port is set to 82 with IP address: http://192.168.0.25, user needs to input http://192.168.0.25:82 into IE browser.

Server port: communication port

Step 3: After selecting "Obtain an IP address automatically", the device will distribute IP address, subnet mask, and gateway IP and DNS server.

Step 4: Enable PPPoE to directly connect the DVR to internet via ADSL and then input the user name and password. Click TEST button to test the effectiveness of the relevant information.

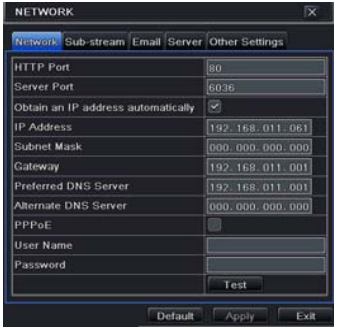


Fig 4.28 Network Configuration - Network

4.6.2 Sub stream

Step 1: Enter into system configuration → network configuration → sub stream. Refer to Fig 4.29.

Step 2: Select fps, resolution, quality, encode and max bit rate

Step 3: User can setup all channels with same parameters. Tick off "all" to do relevant setup.

Fig 4.29 Network Configuration - Sub Stream

Parameter	Meaning
FPS	Range from: 1-30 (NTSC), 1-25 (PAL)
Resolution	Support CIF
Quality	The higher the value, the clearer the record image is. Six options: lowest, lower, low, medium, higher and highest.
Encode	VBR and CBR
Max bitrate	Range from: 32 kbps, 64 kbps, 128 kbps, 256 kbps, 384 kbps, 512 kbps, 768 kbps

4.6.3 Email

Step 1: Enter into system configuration → network configuration → email. Refer to Fig 4.30.

SMTP Server/Port: The name and port number of SMTP server. After selecting "This server requires a secure connection (SSL)", user can setup mail servers (such as Gmail) according to actual needs.

Send address/password: Sender's email address/password

Receive address: Receiver's email address. Here user can add at least three email addresses.

Click TEST button to test the validity of the mailbox.

Attaching image: Tick off this item. The system will attach images when sending the emails.

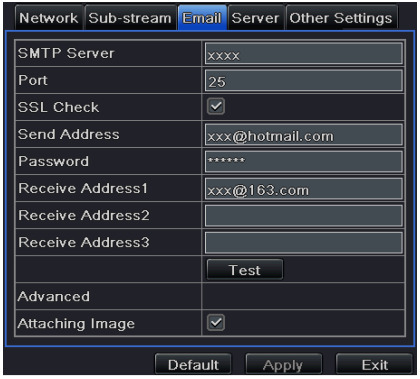


Fig 4.30 Network Configuration - Email

4.6.4 Server

This function is mainly used for connecting ECMS. The user needs to enable the active report first in the ECMS when adding a new device. Then enter into the server interface and enable it. Input the IP address and port of the transfer media server of ECMS. The default server port is 10002. If it is modified, please enter into the transfer media interface to check.

After the user enables the active report, the ECMS system will auto allot a Device ID. The user needs to check this reported device ID in the ECMS.

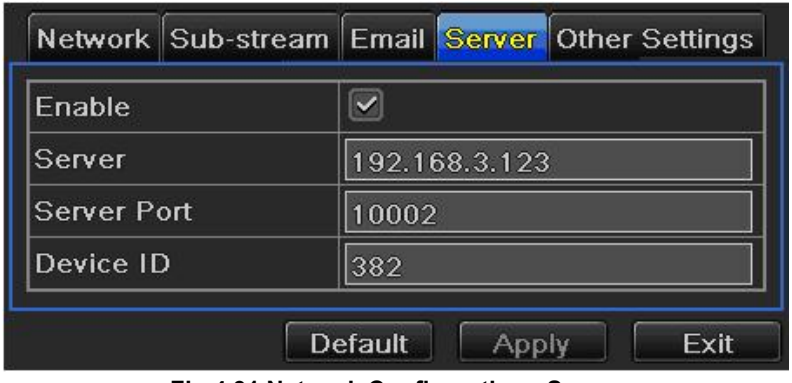
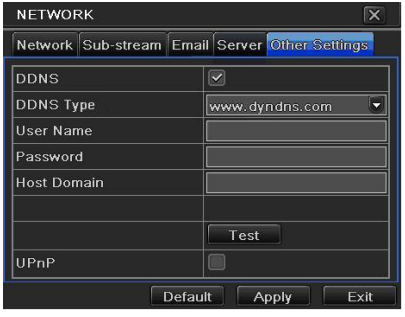


Fig 4.31 Network Configuration - Server

4.6.5 Other Settings

Step 1: Enable DDNS server: user needs to input user name, password and host domain name of the registered website, click TEST to test the effectiveness of the relevant information.

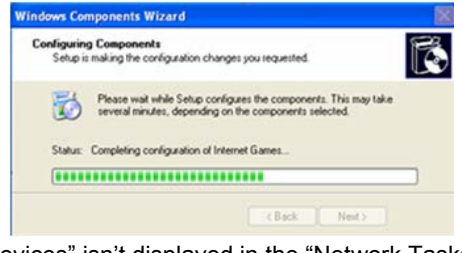
Step 2: Click “default” button to set to default settings. Click “apply” button to save the setting and click “exit” button to exit current interface.



Note: The domain name server that selected by user is a banding domain name of DVR. User should logon the website which provided by the server supplier to register a user name and password firstly, and then apply for a domain name on line. After the successful application, user can access the server from the IE client by inputting that domain name.

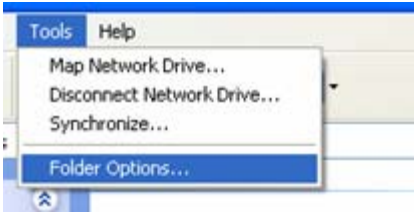
Fig 4.32 Network Configuration - Other Settings

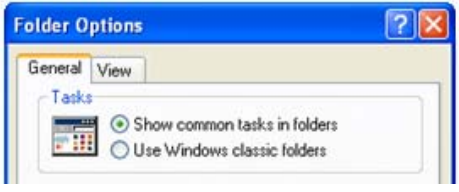
Enable UPnP: User may select UPnP and then enable UPnP function in the user's router. Then user can access DVR through WAN. When accessing the DVR through IE, user can check the IP address by the following method: Double-click the "My Network Places" icon on the desktop in PC, select "Show icons for networked UPnP devices" in the "Network Tasks" list box, an information window will pop up, click "YES" button, "Windows Components Wizard" dialog box will pop up as shown as in the picture below, press "Next" to continue. After finishing the installation of configuring components, the UPnP icons will display. Users can double-click certain icon and check the IP address of the device.


Windows Components Wizard
Configuring Components
Setup is making the configuration changes you requested.
Please wait while Setup configures the components. This may take several minutes, depending on the components selected.
Status: Completing configuration of Internet Games...
< Back
Next >

If "Show icons for networked UPnP devices" isn't displayed in the "Network Tasks" list box, please follow the below operation:

- Click “Tools” – “Folder Options”
- Select the “Show common tasks in folders” in the “Tasks” check box to display the UPnP icon.





1. Domain name Registration (Take www.no-ip.com for example)

Note: Users can self-define the hostname, username and password.

Input www.no-ip.com in the IE address bar. User can access the domain name registration interface.

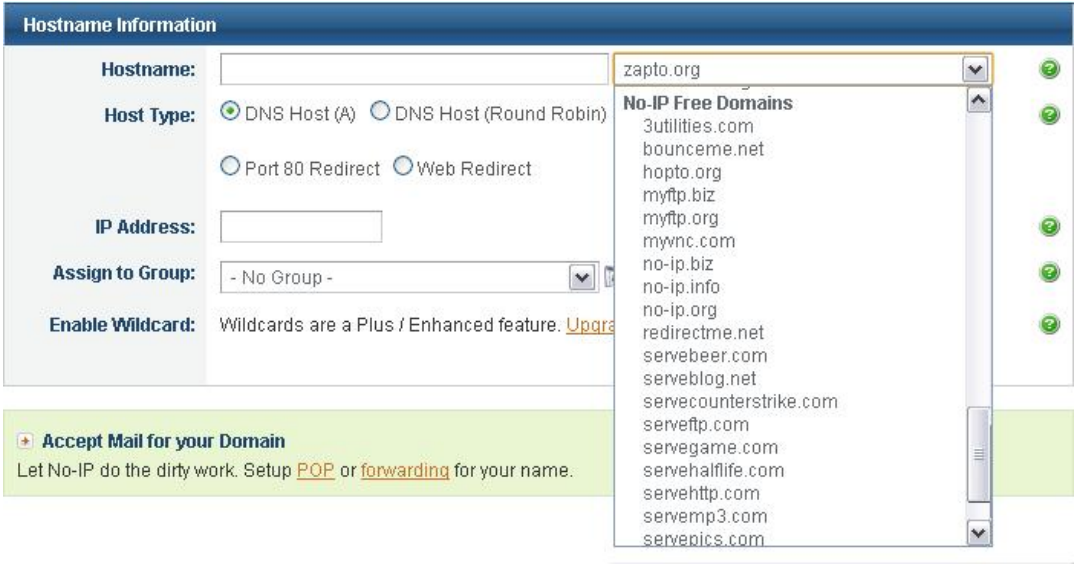
Create user account and a confirmation e-mail will be sent. Click on the confirmation link sent to the e-mail and then user can log in.

Once logged in, click

on the top right-hand corner of the webpage. Then click on

to enter a free domain name. Click

and the following page will appear:



User can type in hostname of choice but if user wants a free domain, must click a domain under No-IP Free Domains List. User's IP Address should automatically be inputed, but if user wants to use a different IP Address, type it in.

After filling out the information and clicking

user will be directed to a page where they can manage, delete, or add more hosts. On the top of that page, the following picture will appear to show that the host has been created.

Note: www.no-ip.com was free when this manual was made so we cannot guarantee that it will continue to be free.

Definitions and descriptions of network configuration:

DDNS server	Website provided by dynamic domain name supplier. The options: www.dyndns.com, www.no-ip.com, etc.
Username	Username to log into the website of domain name supplier
Password	Password to log into the website of domain name supplier
Host domain	The domain name user registered at the supplier's website
Update interval	The interval time of upgrading DVR IP address

4.7 User Management Configuration

Step 1: Enter into system configuration → user management configuration. Refer to Fig 4.33.
Step 2: After clicking Add button, a dialog box will pop-up like in Fig 4.34.

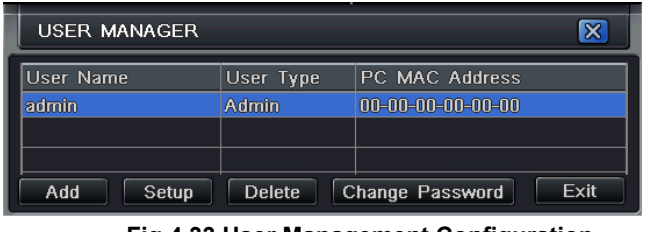


Fig 4.33 User Management Configuration

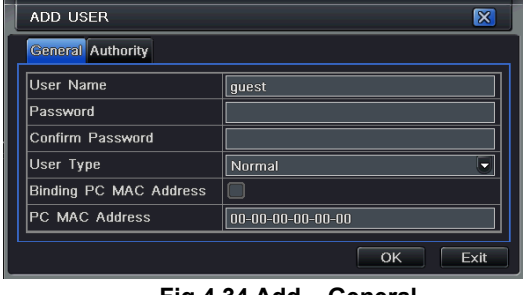


Fig 4.34 Add – General

① **General:** Input username and password. Select user type: normal or advance. Input the MAC address of the PC. Click OK button. This user will be added into the user list box. Click Exit button to exit the current interface.

Note: When the default value of binding PC MAC address is 0, the user is not bind with the specify computer. User

can log in DVR on the binding computer after set the specific binding MAC address.

② **Authority:**

Step 1: Enter into add user → authority referring to Fig 4.35.

Step 2: In the authority interface, assign the definite operation right for that user.

Step 3: In the user management interface, click Setup button to modify username, user type, and binding PC MAC address.

Step 4: Select the user that user wants to delete in the user list box and then click Delete button to delete this user.

Step 5: Click Change password button to modify the password and then click Exit button to exit the current interface.

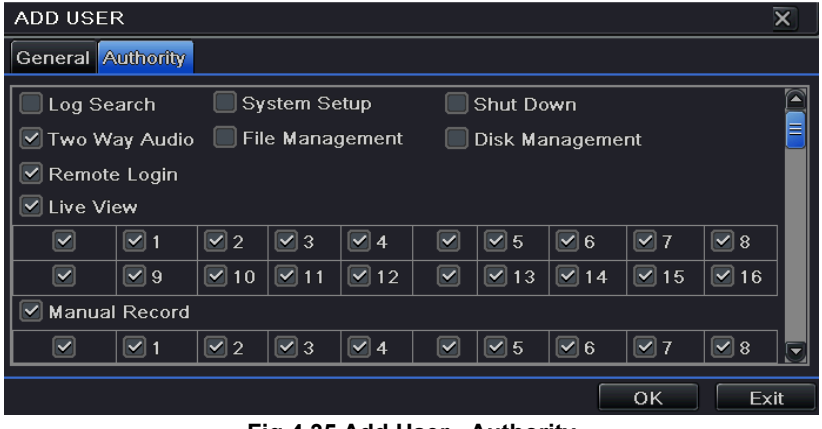


Fig 4.35 Add User - Authority

4.8 P.T.Z Configuration

P.T.Z Configuration includes two submenus: serial port and advance

□ Serial port

Step 1: Enter into system configuration → P.T.Z configuration → serial port. Refer to Fig 4.36.

Step 2: Tick off Enable and then setup the value of address, baud rate, and protocol according to the settings of the speed dome.

Step 3: User can setup all channels with same parameters.

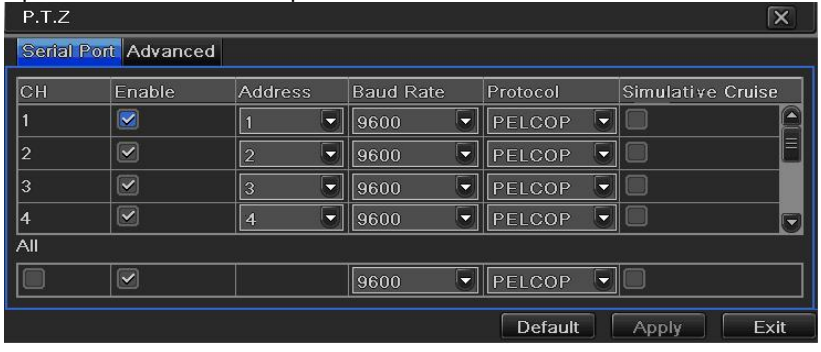


Fig 4.36 P.T.Z Configuration - Serial Port

Definitions and descriptions of serial port:

Parameter	Meaning
Address	The address of the PTZ device
Baud rate	Baud rate of the PTZ device. Range form: 110, 300, 600, 1200, 2400, 4800, 9600, 19200, 34800, 57600, 115200, 230400, 460800, 921600.
Protocol	Communication protocol of the PTZ device. Range from: NULL, PELCOP, PELCOD, LILIN, MINKING, NEON, STAR, VIDO, DSCP, VISCA, SAMSUNG, RM110, HY, N-control.

Simulative Cruise	If enabled, no matter whether the PTZ device supports cruise or not, the presets will cruise.

② Advance

Step 1: Enter into system configuration → P.T.Z configuration → advance. Refer to Fig 4.37.

Step 2: In the Advance interface, after clicking preset "Setting" button, a dialog box will pop-up like in Fig 4.38.

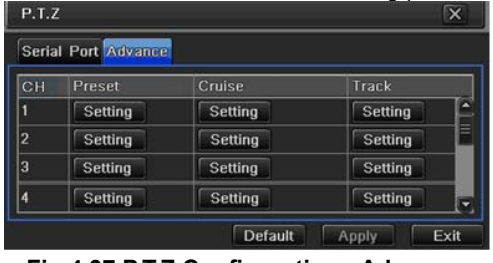


Fig 4.37 P.T.Z Configuration - Advance

Fig 4.38 Advance - Preset Setting

a) In the preset interface, click Setting button to see a window like in Fig 4.39.

Fig 4.39 Preset - Setting

b) User can control the dome rotation: up, up left, down, right down, left, left down, right, and up right. User can also stop rotation. Adjust the rotate speed and the value of zoom, focus, and iris of the dome.

c) Select the serial number of the preset point. Click button to enable the PTZ wiper and click button to

enable the PTZ light.

Note: PTZ must support wiper and light in order for these two functional buttons can take effect. At the same time these two buttons are just available when selecting PELCOP or PELCOD.

Click Save button to save the settings. Click icon to hide the tool bar and right-key can remerge it. Click icon to exit the current interface.

d) In the preset interface, click OK button to save the setting and click Exit button to exit current interface.

Step 3: In the Advance interface, click cruise "Setting" button and a dialog box will pop-up like in Fig 4.40.

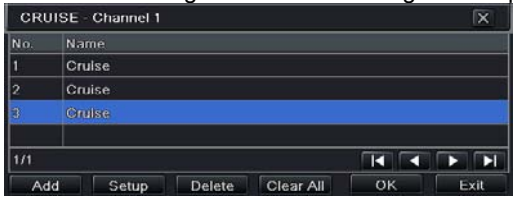


Fig 4.40 Cruise Set

a) Click Add button to add cruise line in the list box (max 8 cruise line can be added). Select a cruise line and click Setup button to see a window like in Fig 4.41.

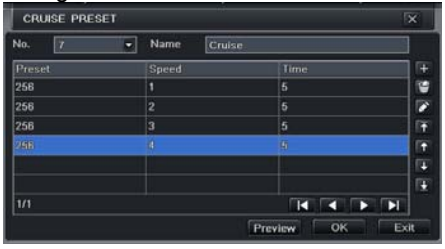


Fig 4.41 Cruise Set - Modify Cruise Line

b) Click Add icon to set the speed and time of preset point. Select a preset point and click Delete icon to

delete that preset point. Click Modify icon to modify the setting of a preset point. User can click those icons to adjust the position of preset point. Click Preview button to preview the cruise line and then click OK button to save the setting. Next, click Exit button to exit current interface.

c) Select a preset point in the cruise line list box and click Delete button to delete that cruise line. Click Clear all button to clear all cruise line from the list box. Click OK button to save the setting and click Exit button to exit current interface.

Step 4: In the Advance interface, click track "Setting" button to pop up a dialog box like in Fig 4.42.

Fig 4.42 Track Setting

a) User can control the dome rotation: up, up left, down, right down, left, left down, right, and up right. User can also stop rotating. Adjust the rotate speed and the value of zoom, focus, and iris of the dome. Click Start Record button to record the move track of PTZ and click this button again to stop recording. Click Start track button to play recorded track and click this button again to stop playing.

b) Click icon to hide the tool bar. Right-key can remerge it. Click icon to exit the current interface.

Step 5: In the Advance interface, click "default" button to set to default setting. Click "apply" button to save the setting and click "exit" button to exit current interface.

4.9 Advanced

Advanced configuration includes three submenus: reset, import/export, and block/allow list.

4.9.1 Reset

Reset all settings the device will reboot.

4.9.2 Import/Export

User can export the data files into mobile storage device as backup function, and then import specified data files from

mobile storage device to DVR.

4.9.3 Block/Allow list

Fig 4.43 Block/Allow list

Here, the authorized user can prohibit computer users within a certain IP address segment from accessing to DVR or admit computer users within a certain IP address segment into DVR. For example, if authorized user doesn't want computer users within IP address segment from 196.168.000.002 to 196.168.000.004 to access to DVR, authorized user can tick off Block list, and then input such IP address segment. After that, click Apply to save settings. If authorized user allows computer users within a certain IP address segment to access DVR, they can tick off Allow-list, and then operate in the same way.

5 Record Search & Playback and Backup

Search configuration includes four submenus: time search, event search, file management, and image.

5.1 Time search

Step 1: Enter into Search configuration → time search. Refer to Fig 5.1.

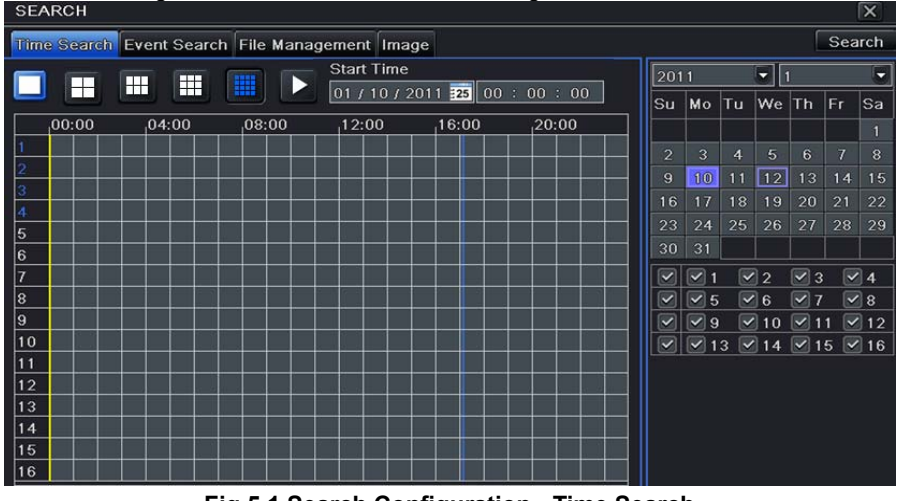


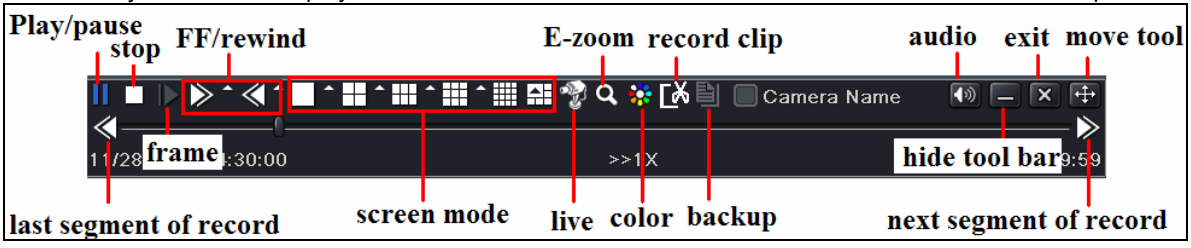
Fig 5.1 Search Configuration - Time Search

Step 2: Select channel, screen display mode, the highlight date in the calendar means there's recorded data.

Step 3: Select a date, press Search button, click the time grid to set the play start time, or input play record time manually. The selected time matches the blue grid.

Note: The columns mean hours and the rows mean channels.

Step 4: Click Play button to playback recorded videos. Click the relevant buttons on the screen to do operation:



Playback buttons

Note: When the monitor resolution is VGA800*600, the time search interface will appear a hide button. Click this button to expand the whole interface.

Click button to select channels to show live images in the playback interface. Only four channels at most can be selected to display live images.

Note: When the monitor resolution is VGA800*600, the time search interface will appear a hide button. Click this button to unfold the whole interface.

The method of backing up record videos during a certain period in the playback interface:

Select the start time by dragging the slider and click icon. Then select the end time and click this icon again to confirm the record period. Next, click icon to backup the record during this period.

5.2 Event Search

Step 1: Enter into Search configuration → event search. Refer to Fig 5.2.

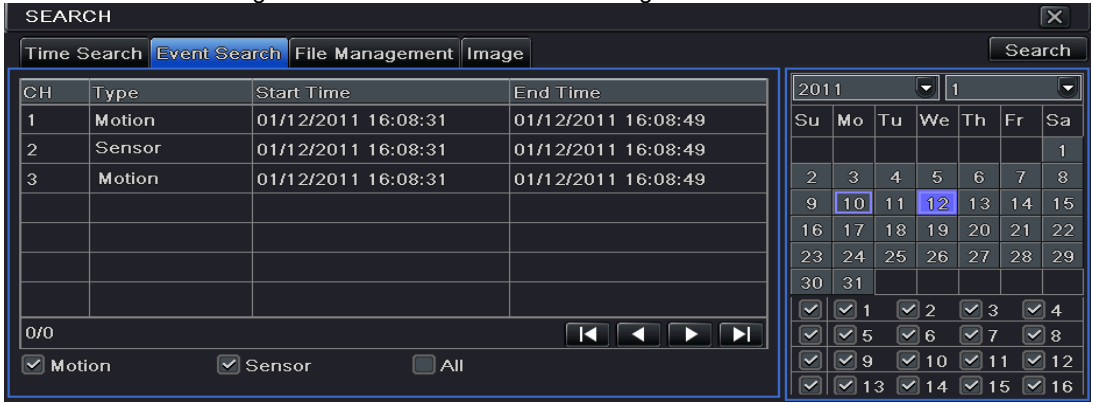


Fig 5.2 Search Configuration - Event Search

Step 2: After clicking Search button, the searched event information will be displayed in the event list box. User can select date and channel. Tick off Motion, Sensor, or All accordingly.

Step 3: Double check a certain record file to playback videos.

5.3 File management

Step 1: Enter into Search configuration → file management. Refer to Fig 5.3.

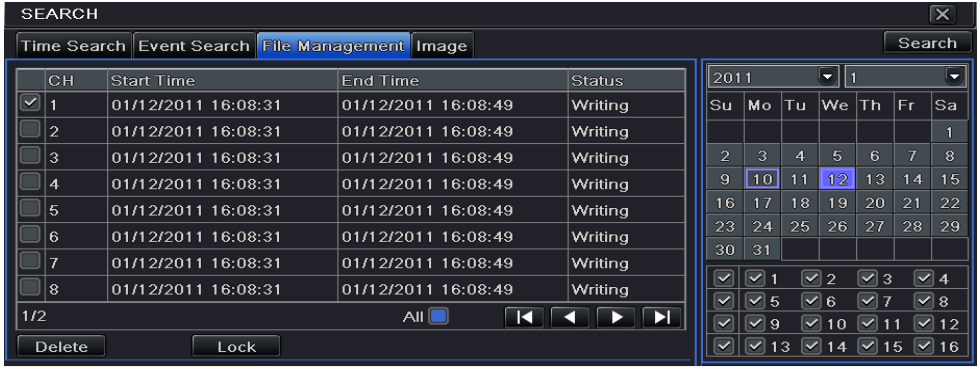


Fig 5.3 Search Configuration - File Management

Step 2: When clicking Search button, the searched files will be displayed in the file list box. User can select date and channels accordingly.

Lock: Select a file and click Lock button to lock this file. After that, that file will not be deleted or covered.

Unlock: Select a locked file and click Lock button to unlock this file.

Delete: Select an unlocked file and click Delete button to delete this file.

Step 3: Tick off “All” button and then user can lock/unlock or delete all files in the file management column.

Step 4: Double click an unlocked item to playback.

5.4 Image

In this interface, user can set start, end time, and channels to search the captured images and save, lock, or delete these images. There are at most 2000 images which can be saved in the SATA disk. If there are more images saved in the SATA disks other than 2000 images, those additional images will supersede prior images. Double left-click the image and it will automatically playback from the time of the image captured.

5.5 Backup

This unit supports backup by USB device, through the USB port on the front panel. User also can make backup by IE browser via internet. Refer to “7.3.2 Remote Backup”.

Step 1: Enter into backup configuration. Refer to Fig 5.4.

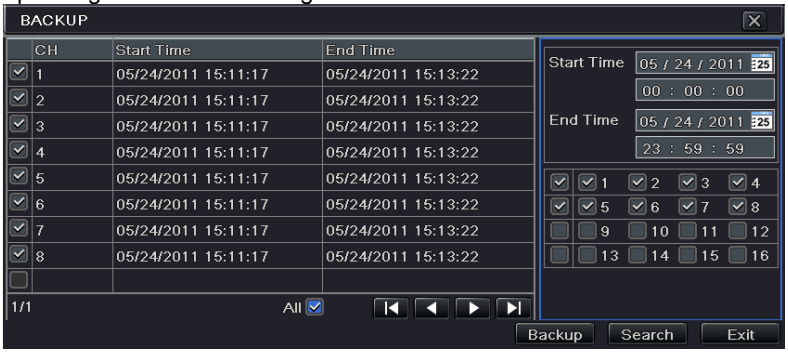


Fig 5.4 Backup Configuration

Step 2: Set the start & end time, select channels, and click Search button to display the searched data in the data backup list box.

Step 3: Check data file or tick off “All” to select all data files, click Backup button, Backup information dialog box will pop-up.

Step 4: In the backup information interface, user can check the relevant information of backup files, storage type, save file type, etc. Click Start button to start backup.

6 Manage DVR

6.1 Check System Information

Check system information includes five submenus: system, event, log, network, and online user.

6.1.1 System Information

In this interface, user can check the hardware version, MCU version, kernel version, device ID, etc.

6.1.2 Event Information

In this interface, user can check recorded events according to set date.

6.1.3 Log Information

In this interface, user can check relevant log information according to set date.

6.1.4 Network Information

In this interface, user can check relevant parameters of network.

6.1.5 Online Information

In this interface, user can check the details of the current connection of online users.
Refresh: Refresh the current interface.

6.1.6 Record Information

In this interface, a user can check resolution, ftp, and record status, including sensor alarm recording, motion recording, manual recording, or schedule recording.

6.2 Manual alarm

In this interface, user can check the relevant parameters of manual alarm.

6.3 Disk management

1. **Format the disk**

Step 1: Enter into disk management interface.

Note: Please format the hard disk before recording. If not being formatted, it will show the status of the disk-free space and total space shows OM at the bottom of screen.

Step 2: Click Refresh button to refresh the disk information of the list box. Set the property of the disk and then click Apply button to save the setting.

Step 3: Select a hard disk and click Format button to start format.

Note: All recorded files in the hard disk will be lost after being formatted.

2. Advanced

User may check model, S/N, firmware, and health status of the disk in this interface. User also can monitor the temperature, internal circuit, di-electric material of the disk, analysis of the potential problems of the disk, and warnings to protect its data.

6.4 Upgrade

Currently, it only supports USB update. Get the software from your vendor when there is a new software version and make sure it is corresponding with the DVR. User can check the USB information in Disk management.

Software Upgrade: User needs to copy the upgrade software from vendor into the USB storage device and then connect to the USB port. Enter Menu → Upgrade. The upgrade software name is displayed in the upgrade list box. Select that software and click Upgrade button to start upgrading. Please wait for a while when the system is rebooted. Please don't cut off power during upgrade.

6.5 Logoff

Click Log off icon. A log off dialogue box will pop up. Click OK button and the device will log off. If user wants to log in again, click icon to enter into user name and password to re-login.

7 Remote Surveillance

7.1 IE Remote Surveillance

In order to view the DVR from a network, it must be connected to a LAN/WAN or internet. The network setup should be done accordingly. Please refer to “4.6 Network Setup”. This DVR supports IE browser, on Windows XP, and Vista platform.

7.1.1 On LAN

Step 1: Enter into the DVR’s Main Menu → Setup → Network interface to input IP address, Subnet Mask, etc .If using DHCP, please enable DHCP in both the DVR and the router.
Step 2: Enter Record Setup to set network video parameters like resolution, frame rate, etc.
Step 3: Open IE on a computer on the same network. Input the IP address of the DVR in IE and press enter.
Step 4: IE will download ActiveX components automatically. Enter the username and password in the subsequent window.

***Notice**: If HTTP port is not 80 and is a different number instead, user needs to add the port number after IP address. For example, if set HTTP port as 82, user needs to input IP address like 192.168.0.25:82.*
User name and password here are the same with that used on the DVR. The default is admin and 123456.

7.1.2 On WAN

There are two ways for the DVR to connect to internet.
1. Connect the DVR to internet through router or virtual server
Step 1: Enter into the DVR’s Main Menu → Setup → Network interface to input IP address, Subnet Mask, etc. If using DHCP, please enable DHCP in both the DVR and router.
Step 2: Forward IP address and port number in Virtual Server setup of the router or virtual server. Configure the firewall to allow accessing the DVR. (If the user has enabled the UPnP function in both the DVR and router, he can skip this step.)
Step 3: If user wants to utilize dynamic domain name, please apply for a domain name in a DNS server (example: www.no-ip.com, www.dyndns.com, etc.) supported by the DVR or router. Then add to the DVR or router.

Step 4: Open IE browser, input IP address, or dynamic domain name and enter. If HTTP port is not 80, add the port number after IP address or domain name.

Step 5: IE will download ActiveX components automatically. A window pops up and asks for user name and password. Input name and password correctly, and enter to view.

***Notice**: If you cannot download and install ActiveX, please refer to "Appendix A FAQ: Question 8".*

2. Connect the DVR to internet directly.

Step 1: Enter into the DVR's Main Menu → Setup → Network interface to enable PPPoE and then input user name and password received from your ISP. Next, click Apply. The DVR will connect to the server and would give a confirmation message.

Step 2: When accessing the remote interface of DVR, user can input WAN IP to access directly (user can enter into Main menu → Information → Network interface to check IP address). The browser will download ActiveX components.

Step 3: The following setting steps are as the same as Step3, Step 4 and Step 5 in Point 1.

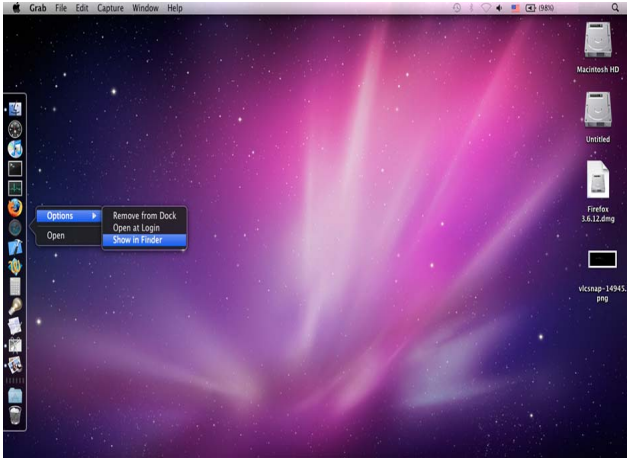
Fig 7.1 View with IE Browser

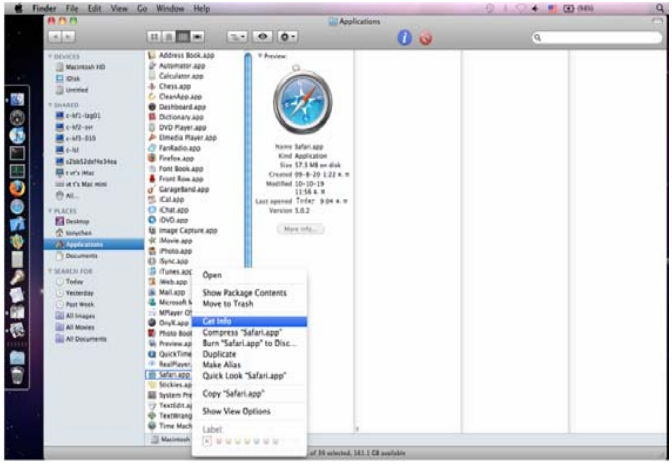
7.2 Remote Surveillance through Apple PC

Note: Because the current plug-in version of client end just only supports 32-bit mode, the safari browser shall start 32-bit mode. If the browser is the earlier MACOS version, the default setting is 32-bit mode and the setting can be skipped. The Setting steps are as follows:

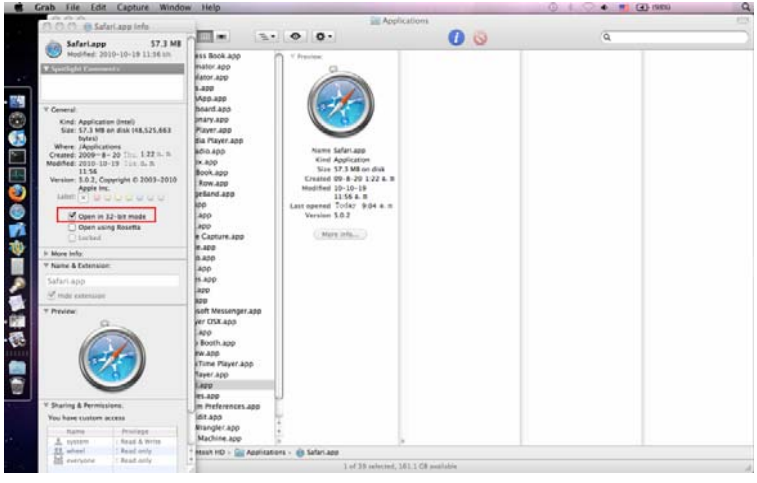
First: Right click safari icon and select “Show in Finder”.

Second: Select Applications → Right click “Safari. App” → Select “Get Info”.



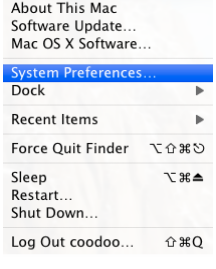


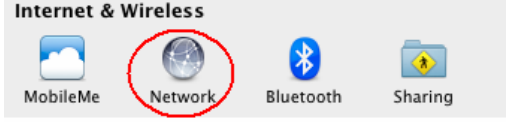
Third: Select “open in 32- bit mode”.



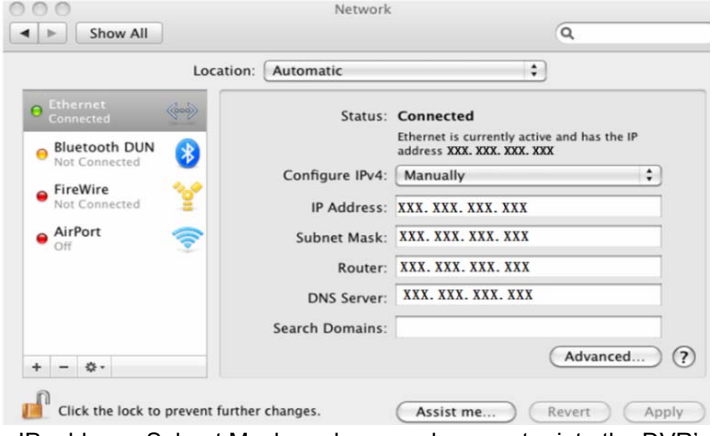
7.2.1 On LAN

Step 1: After starting Apple computer, click icon. The following window will pop up. Please select “System Preferences” → ”Internet &Wireless” → click “Network”.



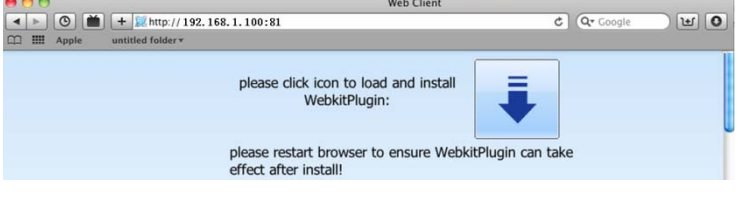


Step 2: Enter into Network interface and then click “Ethernet Connected” to check the internet connection of Apple PC.



Step 3: After acquiring the IP address, Subnet Mask, and so on, please enter into the DVR’s Main Menu → Setup → Network interface to manually input IP address, Subnet Mask, and Gateway according to the configuration of PC. The network segment should be the same as the PC. If using DHCP, please enable DHCP in the DVR and router.

Step 4: After finishing the above information, user can enter LAN IP and http port in the Safari browser. For example: input http://192.168.1.100:81(here 192.168.1.100 is LAN IP of DVR, 81 is the http port of DVR). Click “ ” button and the browser will download ActiveX components as shown below:



Step 5: Click icon and then select the ActiveX components. The welcome interface will be shown. Click “Continue” → ”Install” button and the following window will pop up:

Input the name and password of Apple PC and then click “OK” to install the ActiveX components.

Step 6: After finishing installing the Active X components, please quit the Safari browser. Right click icon on the desktop and then select “Quit” button to quit the browser. Then restart Safari browser. Input the IP address and http port to enter into the login interface of DVR.

7.2.2 On WAN

There are also two ways for DVR to connect to the Internet.

1. Connect the DVR to internet through router or virtual server

Step 1: The network setups are the same as step one to step four of point 1 on WAN of IE remote surveillance.

Step 2: Enter WAN IP and http port in the Safari browser to install the ActiveX components. The concrete steps are the same as steps 5 and 6 of Chapter 7.2.1.

2. Connect the DVR to internet directly.

Step 1: The network setups are the same as step one of point 2 on WAN of IE remote surveillance.

Step 2: Enter WAN IP and http port in the Safari browser to install the ActiveX components. The concrete steps are the same as steps 5 and 6 of Chapter 7.2.1.

7.3 Remote Live Preview Interface

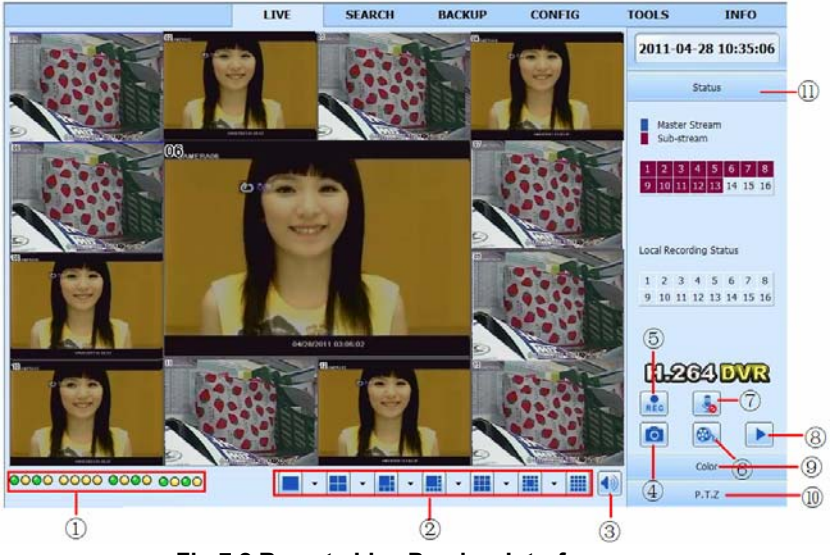


Fig 7.2 Remote Live Preview Interface

Symbol and function Definitions:

①	Channel indicator	②	Screen display mode	③	Volume
④	Snapping picture	⑤	Start manual record	⑥	Start IE record
⑦	Bidirectional talk	⑧	Playback	⑨	Color
⑩	PTZ control	⑪	Master/sub stream status		

Note: Click ***button to record manually and the record file will be saved in user's PC.***

Screen display mode: Click the icon beside the screen display mode and the channel selection dialog will appear as below:

Take 8-channel DVR for example: User can tick off channels 1-ch to 8-ch at random to display the live pictures. 6 channels can be selected at most. Then click OK button to confirm the setting.

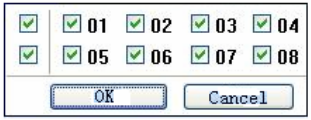


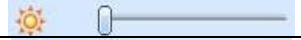
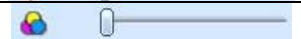
Fig 7.3 Channel Select Dialog

Snap pictures:

Click "Snap" icon and the system will automatically capture pictures and save those pictures in the computer. User should set up the save path for those picture in the Remote Preview interface → Configuration → Local configuration.

Color adjustment:

Drag the slide bar to adjust Brightness, Contrast, Hue, and Saturation. Click Default to reset them to original value.

Buttons	Description
	Drag the scroll bar to adjust the brightness of the channel display
	Drag the scroll bar to adjust the contrast of the channel display
	Drag the scroll bar to adjust the saturation of the channel display
	Drag the scroll bar to adjust the hue of the channel display
	Click this button to recover the default value of brightness, contrast, saturation and hue
	Save the adjustment

PTZ control:

Please connect speed dome to the device via RS485 first. Make sure the protocol of the speed dome is supported by the device and set the relative parameters manually. User can control the dome up, down, right, left or stop rotating on Control Center, adjust rotation speed, Iris and zoom, focus on the dome, and set the presets, etc.

Buttons definition:

Buttons	Description
	means the dome rotate up. means the dome rotate up left. means the dome rotate up right. means the dome rotate down. means the dome rotate left down. means the dome rotate right down. means the dome rotate left. means the dome rotate right. means the dome stop rotating.
	Drag the scroll bar to adjust rotating speed of the dome.
	'Iris' button. Click button near 'Iris' button to increase light of the dome. Click button near 'Iris' button to decrease light of the dome.
	'Zoom' button. Click button near 'Zoom' button to zoom in the locale picture of this camera. Click button near 'Zoom' button to zoom out the locale picture of this camera.
	'Focus' button. Click button near 'Focus' button to have long focus. Click button near 'Focus' button to have short focus.
	Go to the Preset
	Select and do auto cruise
	Track

	Auto scan
	Wiper button
	Light button

Click the right mouse on the live interface and a pull-down menu will appear like in Fig 7.4.

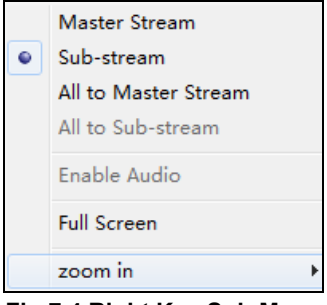


Fig 7.4 Right Key Sub Menu

Stream: This DVR supports master stream and sub stream. Master stream has higher frame rate, max 30 FPS (NTSC)/25 FPS (PAL) for every channel, but it needs higher network bandwidth simultaneously. Sub-stream has low frame rate, max 7 FPS (NTSC)/6FPS (PAL) for every channel. It requires low network bandwidth. Therefore, users can select the stream according to their bandwidth.
All to master/sub stream: Set all channel to master stream or sub stream.
Enable audio: Enable or dis-enable audio.
Full screen: The live preview picture will display with full screen and the tool bar will be hidden. Double click left mouse or click right mouse to return.
Zoom in: Single channel large screen electronic amplification.

7.4 Remote Playback & Backup

7.4.1 Remote playback

Click button to enter into record playback interface. Refer to Fig 7.5.

Select the record date and channels. Double-click the file name in the recorded file list box. User can play that file and preview the picture.

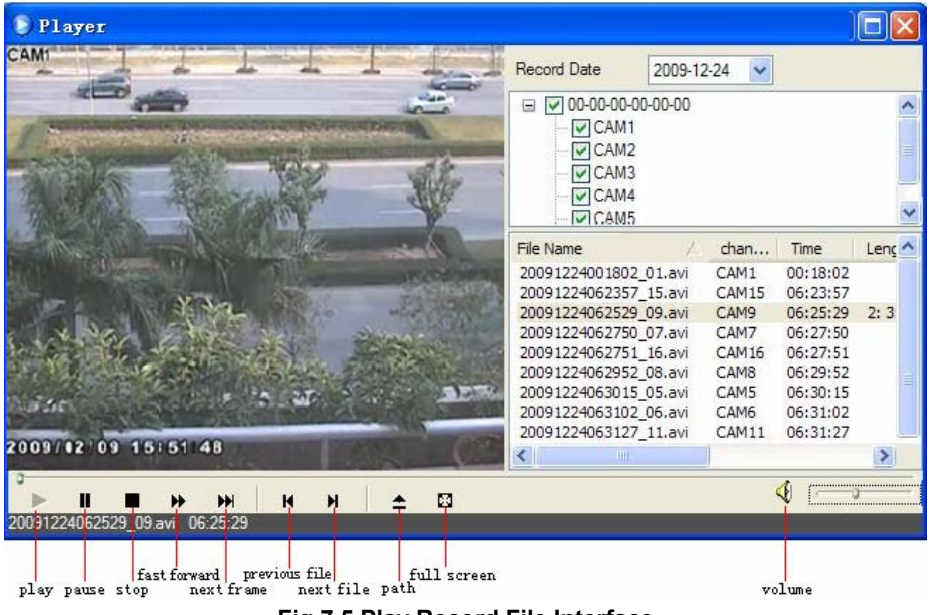


Fig 7.5 Play Record File Interface

This DVR supports remote time search, event search, and file management.

By Time Search:

Step1: Enter into Search → time search. Refer to Fig 7.6.

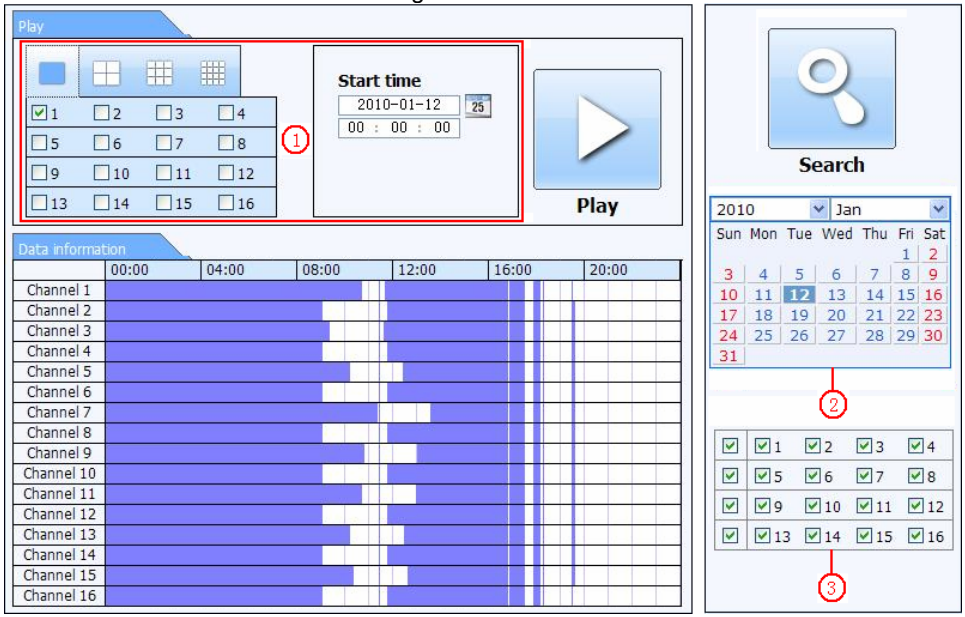


Fig 7.6 Time Search Interface

Step 2: Click “Search” button. The recorded data will be displayed in the data information list box. The highlighted date in area ② means there is recorded data. Click those data and select the channels in area ③.

Step 3: User can set the data playing time and display mode in area ① as required.

Step 4: Select certain item from the data information list box and click “play” button to playback.

Step 5: Click the relevant buttons in the interface. User can do some operations such as: fast forward, pause, change channel mode, research, etc. Refer to Fig 7.7.

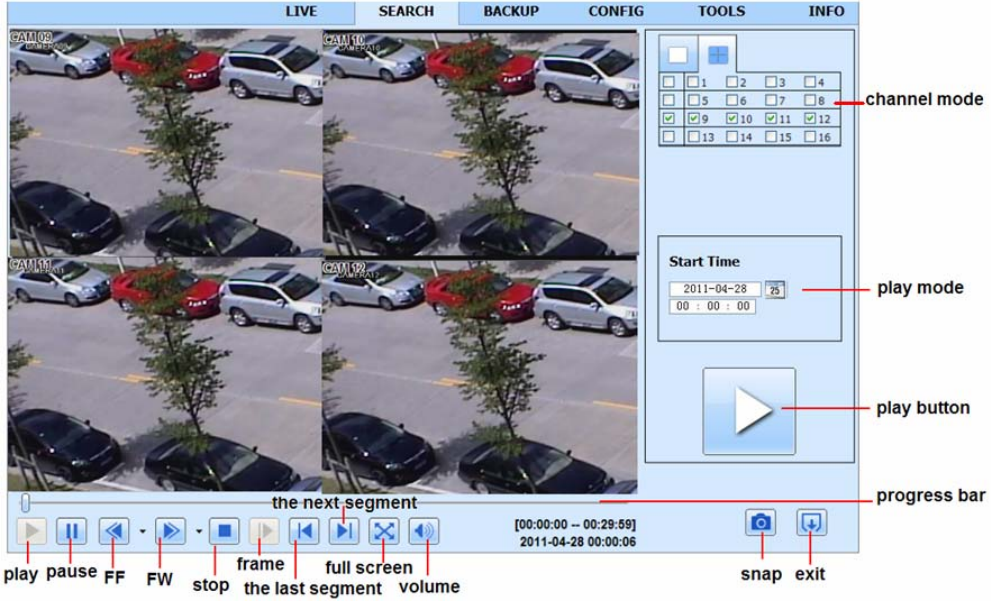


Fig 7.7 Time Search Playback

By Event Search:

Step 1: Enter into Search → event search. Refer to Fig 7.8.

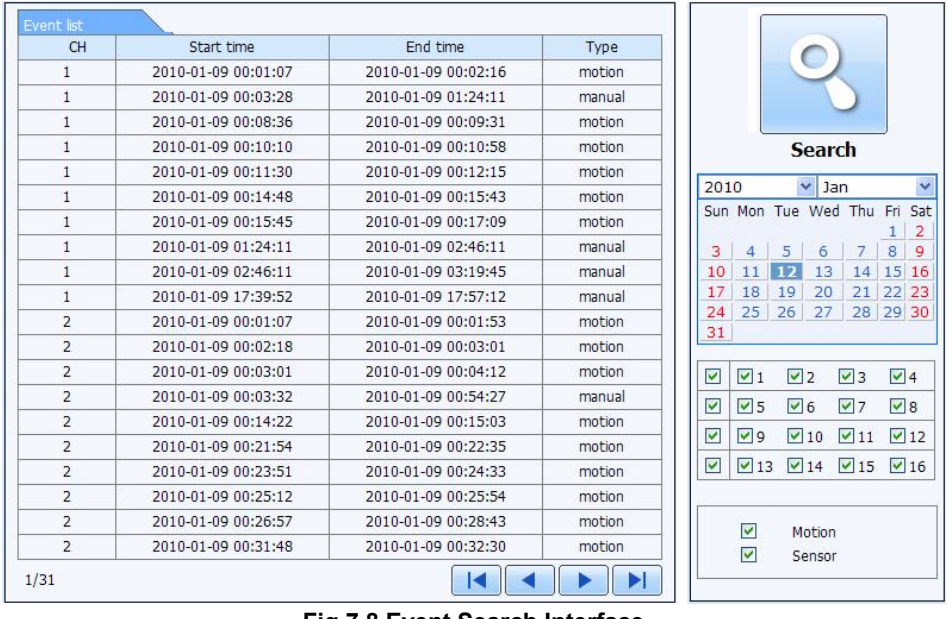


Fig 7.8 Event Search Interface

Step 2: Click the highlighted date and select channels and then tick off the event type: motion and sensor. Click “search” button.

Step 3: The events will be displayed in the event list box. Double-click certain item to playback.

File Management

Step1: Enter into Search → file management. Refer to Fig 7.9.

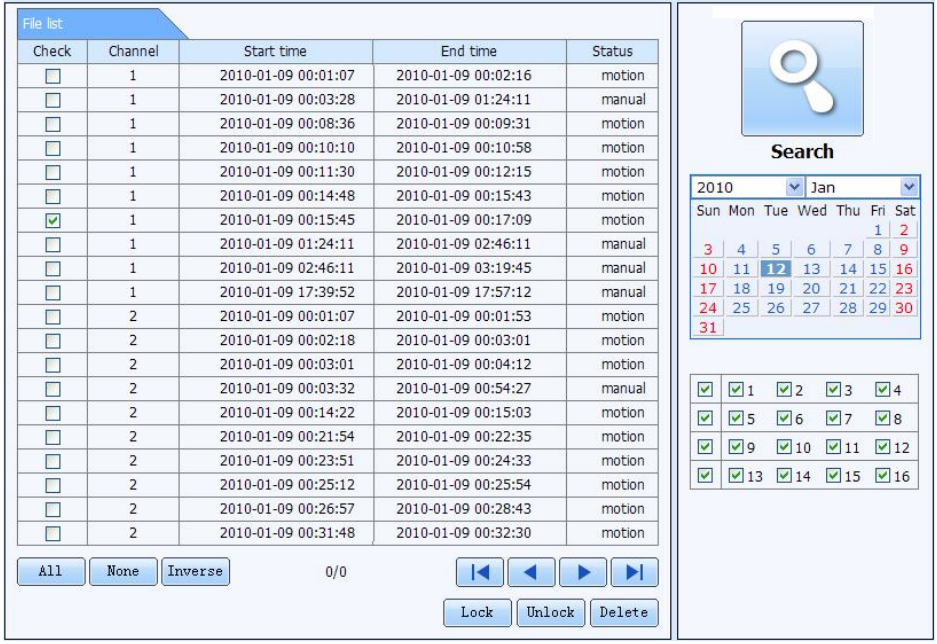


Fig 7.9 File Management Interface

Lock: Select certain file item in the file list box. Click “Lock” button to lock this file that cannot be deleted or overlaid.

Unlock: Select a locked file and click “unlock” button to unlock this file.

Delete: Select an unlock file and click “delete” button to delete this file from file list.

7.4.2 Remote Backup

Click Backup button to enter into backup interface. Refer to Fig 7.10.

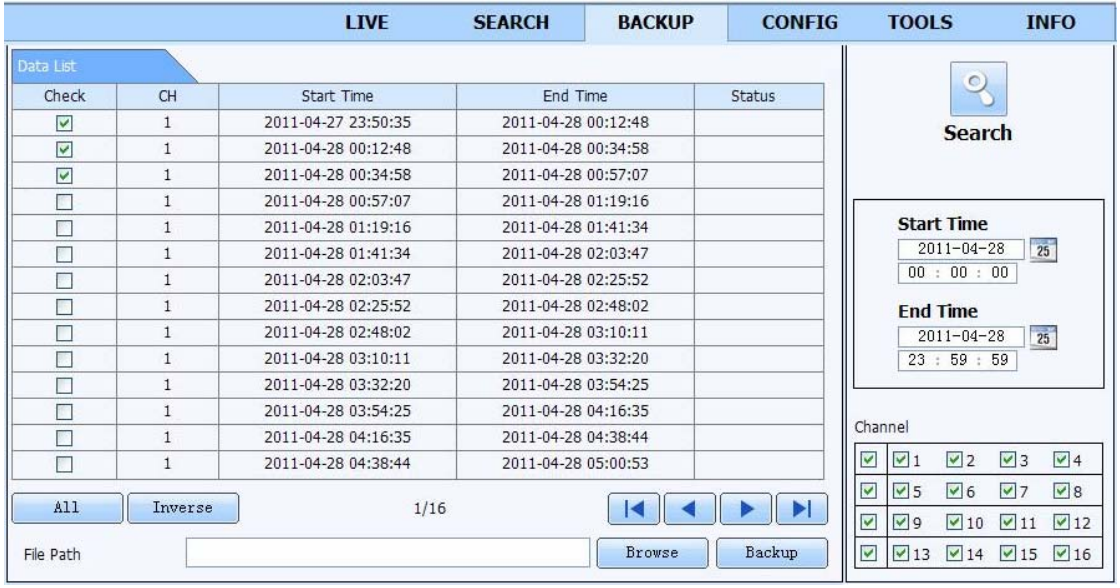


Fig 7.10 Remote Backup Interface

Step 1: Select channel and set the start and end time. Then click “search’ button to display the file information in the file list box.

Step 2: Select backup files and click “browse” button to set the save path. Then click “backup” button to start backup. The backup files will be saved on user’s PC.

7.5 Remote System Configuration

User can remotely setup the parameters of the device. Functions of remote configurations include: basic configuration, live configuration, record configuration, schedule configuration, alarm configuration, network configuration, PTZ configuration, and user configuration. User should select an item in the menu list on the left first and then setup the relative parameters. When one user sets up parameters of a certain item, others cannot set it up. Click Config to enter into the below interface like in Fig 7.11.

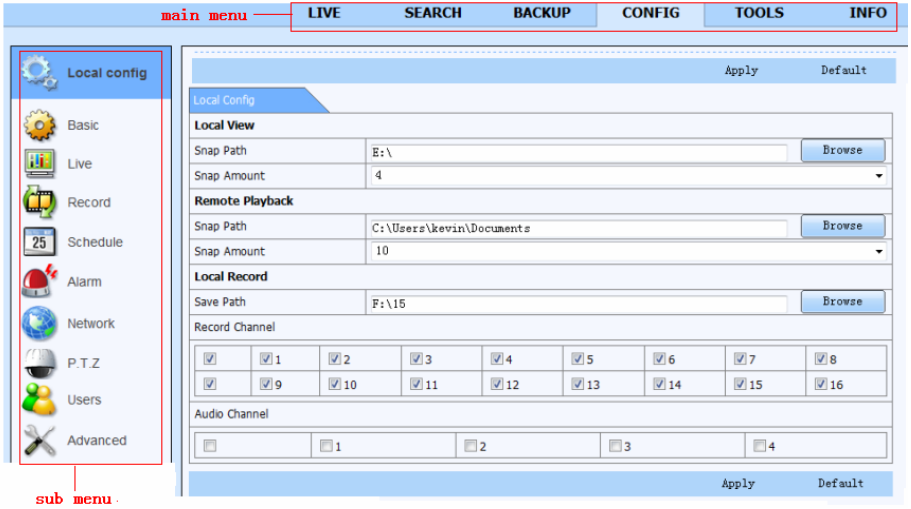


Fig 7.11 Remote Menu Setup

The sub menu lists and the options in every item are similar with those on the DVR. Please refer to Chapter 3 “Main Menu Setup Guide” for more details. Click “Apply” button to save the above settings. Click “default” button to recover the original settings.

7.6 Remote Management

Remote Information Search

The system will automatically record the working condition and operation process during the period of work. User can view information, such as username, IP address, and so on. Enter into INFO → Log. User can set the start time to view the log record like below:

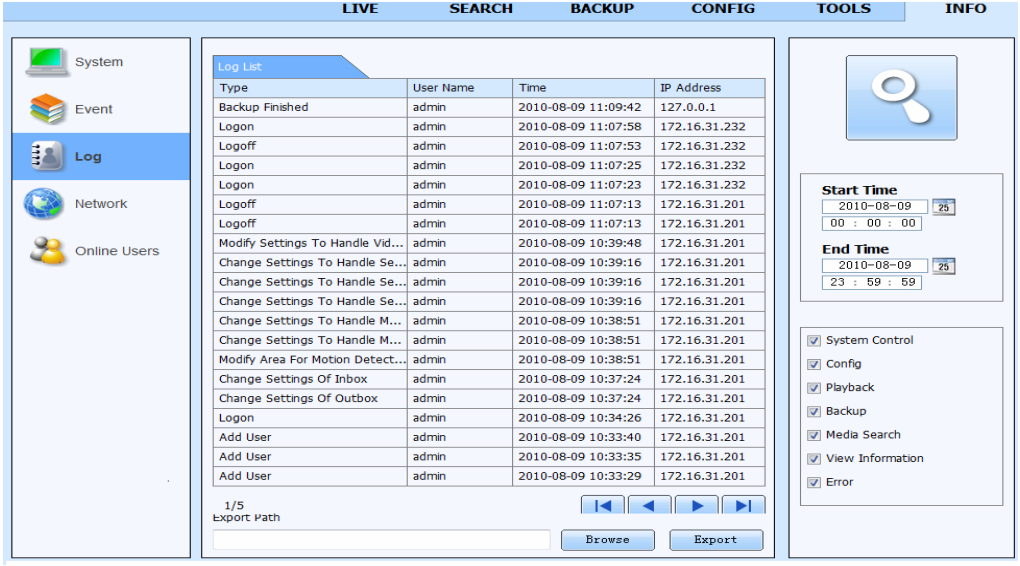


Fig 7.12 Remote Iinformation Search

Note: There may be subtle differences with respect to functions of remote surveillance between through IE and through Apple PC. Here we only take IE remote access for example.

Appendix A FAQ

Q1. Why can't the DVR start after being connected to the power?

a. The adapter has been damaged. Please change an adapter.

b. The power of the adapter is not enough. Please remove the HDD to check.

c. Hardware problem.

Q2. There is no menu output or only has live image display.

a. Check whether other devices can display menu or long press ESC key to wait for login dialog box to appear.

Q3. There's indicator of the DVR lights, but no output. Why?

a. The power of the adapter is not enough. Please remove the HDD or change an adapter to try.

b. The video format of the DVR is different from that of the monitor.

c. Connection problem. Please check the cable and the ports of monitor and DVR.

Q4. Why are no images displayed on parts or all of the channels of the DVR?

a. Connection problem. Please check the cable and the ports of camera and DVR.

b. Camera problem. Please check the cameras.

c. The video format of the DVR is different from that of the cameras. Please change DVR system format.

Q5. Cannot find HDD

a. The power of the adapter is not enough. Please change an adapter to try.

b. Connection problem. Please check the power and data cables.

c. The HDD is damaged. Change a new one.

Q6. Cannot record

a. Don't format HDD. Please format it manually first.

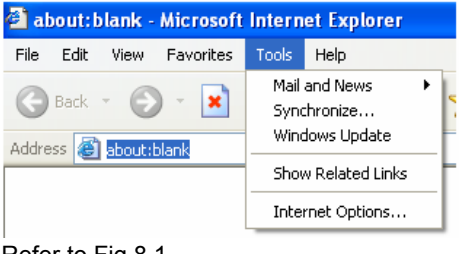
b. Don't enable record function or setup incorrectly. Please refer to Chapter 5 “Record Search & Playback and Backup”.
c. HDD is full and does not enable recycle function. Please refer to “4.3 Record Configuration”. Change to a new HDD or enable recycle.
d. The HDD is damaged. Change a new one.

Q7. Cannot use mouse

a. Wait 1-2 minutes after mouse is connected.
b. Not detected. Plug/unplug several times.
c. The mouse is incompatible. Please change to another mouse.

Q8. Cannot download ActiveX components

a. IE browser blocks ActiveX. Please follow the setup below.
① Open IE browser. Click Tools → Internet Options



② Select Security → Custom Level. Refer to Fig 8.1.
③ Enable all the sub options under “ActiveX controls and plug-ins”. Refer to Fig 8.2.
④ Click ok to finish setup.
b. Other plug-ins or anti-virus blocks ActiveX. Please uninstall or close them.

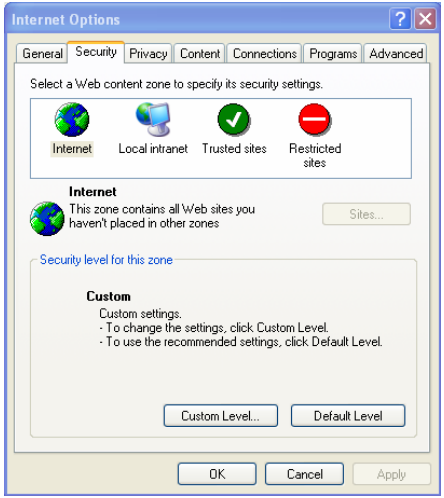


Fig 8.1

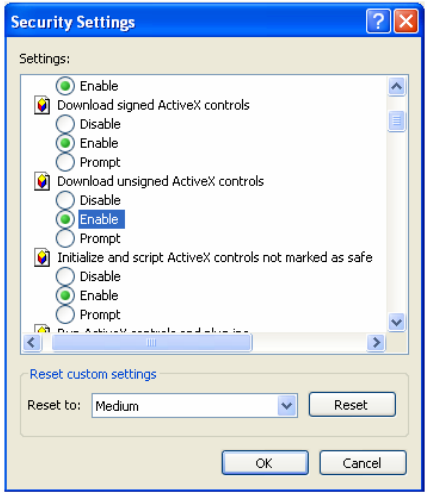


Fig 8.2

Q9: How to deal with when DVR starts and displays "please wait…" all the time

First possible reason: Hard-disk cable and data cable are not connected well.

Solution: Please check the connection of hard-disk cable and data cable and make sure they are connected well. If it still doesn't work, please unplug them and then try re-plugging again.

Second possible reason: It is forced to stop because hard disk has disabled track, which causes the system to check the hard disk.

Solution: Change to another new hard disk or reformat the broken one.

Q10: How to input password and digital numbers

The method to input password and digital numbers is to click the box behind *password* or *items*. A small keyboard will

appear. Please select numbers or letters to input (the initial password is 123456), or you can use the digital keys in the front panel.

Q11: Why is the hard disk used in a DVR identifying it as a new hard disk if it was directly used with another similar type DVR? And why must we format it again?

When DVR only uses one hard disk, the hard disk removed from one to another similar type DVR can work normally without format. However, when a DVR adds a new hard disk, it will identify the hard disk as a new one and inquire whether to format, whether this hard disk was used or not in another similar type of DVR before. In this condition, it can be used normally after being formatted according to the guide. If there's two or more hard disks used in different DVRs, when used in another DVR with a similar type, they will be identified to be two or more new hard disks, and all of them need to be formatted. In general, please do not try using more disks removed from different DVRs into another one in case the data becomes lost.

Q12: What are the minimum configurations of PC for client connecting?

PC Module	Parameters
CPU	Intel Celeron 2.4G
Motherboard	Intel 845
HDD	80G
RAM	512M
VGA	NVIDIA GeForce MX440/FX5200; ATIRADEON 7500/X300
OS	Windows 2000(SP4 above) /Windows XP(SP2 above) /VISTA
DirectX	9.0

Q13: What are the PC configurations for 16-ch real time product with fully open channel mainstream?

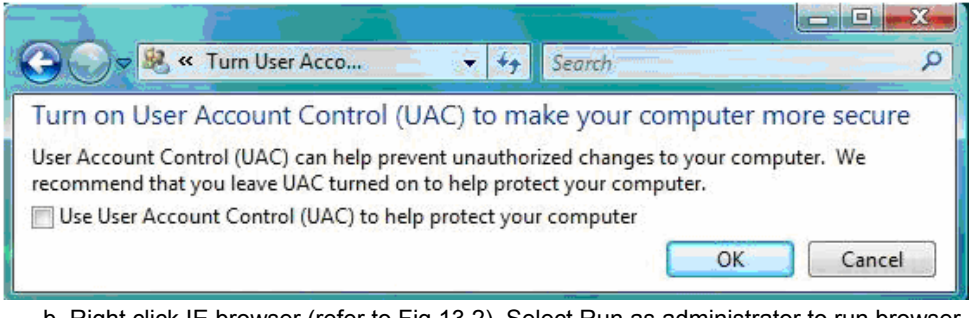
PC Module	Parameters
CPU	Intel Core(TM)2 Duo CPU E4600

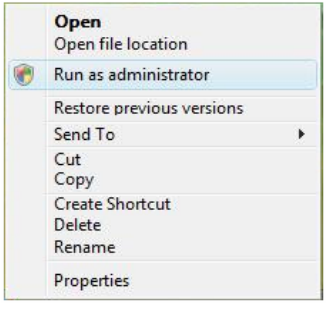
Motherboard	G31/P31 chip
HDD	80G
RAM	1GB
VGA	GMA3100/NVIDIA GeForce 8400/ ATI RADEON HD3450
OS	Windows 2000(SP4 above) /Windows XP(SP2 above) VISTA
DirectX	9.0

Q14: How to handle a situation when codec control is blocked to install in VISTA or Win7 system?

If user gets this problem, there may be two ways to fix it:

a. Enter Control Panel → User Account and Family Safety → User Account Control (refer to below picture). Click Turn User Account on or off. Cancel using User Account Control (UAC) to help protect your computer.


« Turn User Acco...
Search
Turn on User Account Control (UAC) to make your computer more secure
User Account Control (UAC) can help prevent unauthorized changes to your computer. We recommend that you leave UAC turned on to help protect your computer.
Use User Account Control (UAC) to help protect your computer
OK
Cancel



b. Right click IE browser (refer to Fig 13.2). Select Run as administrator to run browser.

Appendix B Calculate Recording Capacity

User can calculate the size of hard disk according to the saving time and DVR recording settings. The DVR uses fixed video bit rate. The table below is the details at different settings.

Video Format	Resolution	Total Frame Rate (FPS)	Video Quality	Bit Rate (kbps)	Used Space(MB/h)
NTSC	CIF	30	Highest	1M	465
			Higher	768k	297
			Medium	512k	230
			Low	384k	173
			Lower	256k	115
			Lowest	128k	56
PAL	CIF	25	Highest	1M	466
			Higher	768k	295
			Medium	512k	235
			Low	384k	175
			Lower	256k	112
			Lowest	128k	56.4

The calculation format is: **Total Recording Capacity = Used space per hour (MB/h) (coverage rate of hard disk) × recording time (hour) × channel numbers.**

For instance, one customer uses NTSC cameras, set resolution to CIF, video quality to Lowest, frame rate to 30 fps for enabling total 16 channels. He wants the unit to record continuously in a month. Below is the calculation:

Total Recoding capacity =56 (MB/h) X 24 (hrs/day) X 30 (days) X 16 (channels) = 645120 (MB) ≈ 645 (GB)

Therefore, customer needs to install just one SATA HDD with 645GB because it can record for almost one month.

Appendix C Compatible Devices

1. Compatible USB drive (though we do not guarantee full compatibility)

Brand	Capacity
SSK	512MB, 1G, 2GB
Netac	4GB
Kingston	2GB
Aigo	2GB
Smatter vider	1GB
SanDisk	4GB

2. Compatible HDD list (though we do not guarantee full compatibility)

Brand	Capacity
Seagate Barracuda LP ST3200542AS	2TB
Seagate Barracuda 7200.11 ST31500341AS	1.5T
Seagate SV35.3 ST31000340SV	1T
Seagate Pipeline HD.2	500G
Seagate Barracuda 7200.10	320G
Seagate Barracuda 7200.10 ST3250310AS	250G
Seagate Barracuda 7200.11 ST3160813AS	160G
Seagate Barracuda 7200.10 ST380815AS	80G
Maxtor Diamondmax 21 STM3160215AS	160G
HITACHI Deskstar HDS721616PLA380	160G

HITACHI Deskstar	80G
WD WD1600JS	160G
Samsung HD161HJ	160G

Appendix D 16-CH Specifications

Compression format	Standard H.264 Baseline
Video output	Composite: 1.0V p-p / 75Ω BNC×2, VGAX1
Video input	Composite: 1.0V p-p / 75Ω BNC×16
VGA Resolution	1280*1024 / 1024*768 / 800*600
Record Resolution	352*240/704*480 (NTSC), 352*288/704*576 (PAL)
Display Frame Rate	480FPS (NTSC), 400FPS (PAL)
Record Frame Rate	480FPS (NTSC), 400FPS (PAL)
Audio input	-8dB~22k, RCA X4
Audio output	-8DB~92dB, RCA X1
Alarm input	NO or NC 16CH
Alarm output:	1CH
Record Mode	Manual / Sensor / Timer / Motion detection
Simplex / Duplex / Triplex	Pentaplex
Network Interface	RJ-45 (LAN, INTERNET)
PTZ control	YES
Communication interface	RS485, USB2.0 x 2 (one for backup, another for USB mouse)
Disk info	2 SATA (not included)
Remote controller	YES
Power supply	12V 3A
Temperature	0℃-50℃
Humidity	10%-90%
Average Operating Power (Excluding HDD)	≤30W